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DISTURBED CHEMICAL EQUILIBRIUM AS A CAUSE OF DISEASE—WITH A THEORY ON THE CAUSE OF MALIGNANCY.

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WHILE acknowledging the importance of the work done by the bacteriologist, and the results obtained by the germicide treatment of disease, it is not well to lose sight of the science of strict therapeutics.

It is generally conceded that the powers of a specific antitoxin, while destroying the effects of original toxin, often results in much harm by its deleterious effects on the nerve centres. It is also a question if antiseptic application may not be the agency of carrying other dangerous agencies into the tissues—agencies that are incompatible to the body requirement.

While the body possesses, in a marked degree, the power to sustain the attack of injurious substances, its integrity is often overcome and most unscientific results obtain.

It is a fact that the entrance of definite bacteria into the body tissues is the cause of infectious disease in many instances, either by the mechanical disturbance of poisonous products of metabolism, or both. There may be other elements or units taken into the body which will cause disturbances of metabolism equally disastrous. The chemical poisons, for instance, or the innumerable list of drugs found in the Dispensary. It behooves us as scientific investigators to give as much consideration to the study of the action of the poisonous drugs and chemicals upon the human body as is given to the study of germs and their detritus, that the science of therapeutics may receive the attention so long withheld.

Late investigators are beginning to question the germ theory as the cause of disease, and to suggest that enzymes, the product of ferments, may be at fault in many instances. It is the writer's opinion that a retention of an enzyme in a cell, due to an interference with the cell's normal ferment, may be a cause of a differentiation of cell proliferation even unto malignancy. In view of the fact that any interference with normal chemical integrity produces disease, and that as malignancy is a manifestation of the extreme departure from the normal chemical equilibrium the above reason for a cause of cancer seems reasonable.

To reason along this line necessitates a knowledge of the application of the imponderable agencies of nature, the physical forces of matter in their relationship and control over the normal and abnormal chemical interchanges continually going on in the human body: it is a subject heretofore very little discussed and very little understood by the medical profession as a whole. Over a century ago De Saussure spoke of these forces in their influences on plant physiology, so also did Duhamel, Hales, Ingenhous, Konrad and Sprengel.

These agencies are pent up in all matter as potential-

ities and it is their different arrangement in the atom or molecule that gives to matter its form and character. We may go so far as to say, that an atom is simple matter plus its potentialities or its electricity. Says J. J. Thompson in a lecture before the Cavendish Physical Laboratory, Cambridge: "Practically the whole mass of the corpuscle is electric, and if it could lose its charge it would cease to have any mass." These potentialities manifest themselves as heat, light, electricity and magnetism, mechanical power being manifested by their activity. They are the directing influences governing the chemical activity going on continually in the body. Now, if there is a disturbance in the potentialities we have an interference in chemical interchanges of the body and in proportion to these changes are the gradational manifestation of departure from normal which is disease.

In disease the potentialities have not the active incentive of health and consequently the processes of recuperation are reduced. This seems to be a general law of all matter and should be well considered in all its phases, when we take up the cause and cure of disease, as physiological integrity is chemical integrity and without this we have disease, germs or no germs.

In a paper published to the profession by the writer in April, May and June (MEDICAL TIMES), 1902, which discussed this subject more thoroughly, it was stated that "cell metabolism is due to chemical and physical principles, and can be explained only on a mechanical basis." Chemical affinity for foodstuffs exists in all cells by virtue of the potentialities pent up in the cell which liberates the energy required for the chemism of the cell. Right here will be seen the necessity of supplying in the form of pabulum those forces required to develop the energy necessary for chemical interchange as required for normal cell metabolism; the want of which permits the beginning of cell decrepitude and germ attack. Everything given in the form of medicine should promote organization. The selective office of the cell will never be at fault in the process of nutrition if it has proper matter of supply for chemical appropriation. To abnormal fermentation is due some two-thirds of the disease of humanity. So long as normal fermentation responds to chemism none of these diseases can arise. A specific change caused by some impetus may so act on the nucleus and protoplasm of a cell as to affect its structure; thereby causing a change of the relative position of its units and so effect its reproducing power. Or the retention in the cell of an enzyme which should be excreted after oxidizing the phosphorous into its acid waste, may give rise to fermentation or malignant degeneration by mal-appropriation. If this is so, and it seems reasonable, we have but to furnish to the cell those elements which sustain combustion and normal fermentation, such as carbon, hydrogen and oxygen, thus abstracting the enzyme, and so removing the impetus that institutes differentiation of tissue unto malignancy and death.

It is more reasonable to believe that malignancy is due to some cause originating in the cell which has

departed from integrity, than it is to believe that a germ is the cause. Protoplasmic function is wholly mechanical; in its normal function a germ has no place. Heat, light, electricity and magnetism are the forces which generate chemical energy. The introduction of heat and light in the form of carbon, hydrogen and oxygen compatibly arranged should render available the chemical energy necessary for repair. The Finsen rays and the X-ray work by this principle, but they are not wholly compatible.

Degenerative changes arise most frequently from the differentiation of protoplasm, which is the cause of structural change in organs and parts of the body. If the flexibility of the colloids of protoplasm be reduced, a corresponding increase of the consistency of a part must necessarily follow. This is what occurs in tissues that are not necessarily malignant; a return to the normal consistency could be brought about only by promoting a return of the colloids of protoplasm to their flexibility or viscosity.

In differentiation of tissue there is either a preponderation of the crystalloids, or of the colloids. In those diseases where stroma abounds we have crystalloid preponderance, or hardening of tissue; where colloids preponderate the opposite takes place—a normal balance is that where neither preponderate, they are in perfect harmony, and here we have physiological integrity. Scirrhus would indicate a preponderance of stroma, or crystalloid preponderance, and colloid degeneration, sometimes found in encephaloid growths, would indicate colloid preponderance.

The discovery of the incentive to this loss of balance would furnish us with a knowledge of the cause of carcinoma. The cause of malignancy in the colloid is where the incentive arises for differentiation, because of the colloid being the protoplasmic part of the cells of the body.

Colloid aberration is produced sometimes by mental and other times by mechanical shocks—mental by emotional, mechanical through accidents.

What changes can or could occur to a cell by substitution after vacuolation, or substitution without vacuolation? Degeneration of its contents so that parts of organs may so differentiate that their functionality is involved. Differentiation is gradational. The different types of disease should be understood to be the particular stages of cellular differentiation. All types of malignant diseases are peculiar cellular differentiations, and must be caused by some incumbrance to normal organization.

The above refers to where the cells are at fault composing the tissues themselves, as distinct from the matter of cell or tissue nutrition. The matter of nutrition may also differentiate by alteration or differentiation of pabulum. Departure from the normal must manifest itself in the quality of tissue produced by it. The body in its aggregate has its prototype in a single gland.

Should the metabolic function be at fault in transforming the matter of cell supply, the potentialities will cause differentiation of tissue. This is the probable cause of degenerative changes as evidenced by growths or enlargements. Malignant growths probably come from an irritation of cell protoplasm or a modification in cellular nutrition.

To explain the reason of this revolt is to explain the cause of malignancy.

Chemical revolt of the cell results in disease, due

probably to interference in nutrition. To restore the normal condition, such remedies should be selected as would administer chemically to the centres originating nutrition, and thus transmit the irrigating requirement for purging the cell of its impurity, and also furnish what is necessary in fertilizing and developing for the growth and reproduction of all the cells of the body.

It is said that "infection may be carried by non-living substances, such as enzymes."

We exist by fermentation and oxidation. Any disturbance in these functions results in some manifestation of disease. In diabetes the ferment that acts on the sugar to change it into alcohol and carbonic dioxide is evidently at fault for reasons possibly not yet clearly understood, but there is a chemical disturbance which is dependent on a ferment or a product of a ferment which shows that the forces presiding over the normal chemical interchanges are at fault, and as it is wholly of a chemical nature should be amenable to treatment by a reinstatement of those elements on which normal chemical integrity depends.

The same may be said to apply to most of the acute diseases, and furthermore, that if fermentation and oxidation be normal there will be small danger of any grave attack, or if as in established disease, the germs be found, the reasonable remedy would be to furnish those elements found in the body in a healthy state and so elevate vitality to the normal—a condition void of germ scavengers, there being no environment or cause existing for their presence. Germs are the accompaniment of diseased conditions; cell decrepitude permits germ attack. Can there be cell decrepitude with normal oxidation and fermentation?

Only those materials that act as a chemical food in promoting organization can possibly aid nature in her rebuilding processes by replacing the lacking elements which give rise to malnutrition and diseases other than those so-called miasmatic or of contagious origin.

The knowledge of physics is of the greatest importance to the medical practitioner, since we are fast coming to understand that the human body is controlled in its functionality by the same physical forces that control matter in all its varied forms, and as the tree or plant has its allotted time for growth and decay, so also has this body of ours. The tree in its vigor shows the action of sunlight, air and the nutritive elements that it takes up from the soil of the earth, all due to the action of the physical forces. So also does man derive benefit from sunlight, air and nutrition, all of which is presided over by the physical forces. Disturbances of the activity of the physical forces on the matter of the body results in disease. Recognizing this fact, it will be seen that it is of the greatest importance to aid physical forces to overcome a manifestation of their disturbance, as typified by what we call disease, by giving those elements of which the body is made up, to act as a nucleus for the action of these physical forces, or what modern science terms electricity.

The physical forces, heat, light, electricity and magnetism may be aided in their action on the body by such chemicals as are found in the colloids of the body; for instance, carbon, oxygen, hydrogen, nitrogen and iron; these are the principal elements found in all protoplasm. Carbon and oxygen favor the play of heat and light, hydrogen tranquilizes the union, nitrogen and iron acting as a nucleus for the play of

electricity and magnetism. Perfect formulation will be attained when we can administer fully to the requirements of the protoplasmic cell. Thirst would be a formidable disease if we had not nature's remedy at hand. Water is a specific for thirst. I believe the time is rapidly approaching when all diseases will be as amenable to scientific formulation, as is thirst to water. I also believe that this attainment will be reached when we are enabled to understand exactly just what form of chemical requirement is necessary for a nucleus for the physical forces to act upon. This necessarily shuts out all of the drugs found in the pharmacopoeia, for to aid nature in her requirements we are obliged to furnish those chemicals which the body requires when in a healthy state.

Inflammatory conditions are considered largely due to the attack of germs; except in virulent poisons, the cell is fortified by nature against the attack of germs, which reasoning shows that the cell must be in a state of lowered vitality which naturally permits the germ attack, in which case those chemicals that administer to the cell requirements, while at the same time acting as a nucleus for the action of the physical forces, will be what is required for the successful treatment of disease, especially so, as they will act in elevating the cell to its normal state and thus fortify it against germ attack. It is much easier to do this than it is to kill off the germs. Take, for instance, the germ attack on Peyer's patches; there are so-called remedies which will free the intestinal canal of germs, but under the same conditions other germs of like nature are ready to take their place. Furnish to these glands that which they require in healthy activity and the germs will have no favorable environment, and they will not only get out, but stay out. In a word, when the locomotive is run in to the repair shop for repairs, the engineer in charge repairs it with the same material that was used originally to make it. If new grate bars are needed, new ones of the same material are substituted; if a connecting rod is broken, a new one of the same material replaces it. The same course should be followed in treating disease of the human body, as the human body is but an elevated state of the soil of the earth, a higher order of machinery, a little more complex in mechanism, but governed by the same principles that govern all matter, no matter in what form it may be found. Manifestations of the disturbance of the physical forces in their action on the matter of the body which are not due to germs may be seen in emotional attacks, such, for instance, as hydrophobia foetal malformations, monstrosities, etc.

We know that medicine fails in becoming a science when erroneous ideas in formulating prevail, and in following out these ideas only the most unsatisfactory results are obtainable, because there is, necessarily, a complete absence of system, and the fundamental reason for this lack of system among many leading chemists and pathologists is in not formulating upon a rational ground the essential compounds required in the nutritive changes going on in disease and in the lack of comprehension that everything given in the form of medicine should promote organization, and prevent the regressive changes constantly taking place in disease by increasing the spermatogenic influence of cells; as disease could never arise were it not that some alteration took place either in the matter of supply in the form of nutrition, or from the metabolic ac-

tivity of each particular cell being altered, because from these two conditions arise all those formations and transformations which constitute the different forms of all pathological processes.

Now, then, this being a correct hypothesis, it must necessarily follow that the bringing of the part or parts into their normal condition again can only be accomplished by proper medication, and to carry out the plan the first thing for the physician to find out is whether the trouble arises from abnormal modification in nutrition of the matter brought to the part, or whether a chemical alteration is going on in the tissue itself, for which the cells of the part would be accountable.

We are aware that functional causes arise from emotional disturbances, while the gravest conditions are from other sources, and, admitting that metabolic function is at fault in transforming the matter of cell supply, the potentialities will cause a differentiation of tissue, causing growths, enlargement and degenerative changes; the growths of malignant type proceed either from an irritation of the protoplasm of the cells, or some modification in cellular nutrition, they being the extreme departure from normal functionality, as before mentioned.

Now, what we deduce from the foregoing proposition is that if the potentialities are at fault in producing regressive changes, we must see that a correction is brought about in those chemical compounds that have departed from their normal integrity; and as we know that nature has selected only the most abundant things at her disposal for man's formation, medical science can never reinstate the same conditions without employing the same means which she first selected; we must treat the body on the principle of preventing disorganizing processes.

Material, being in all instances discreet, can never become equal in durability to an influence that is continuous, as the incessant change going on in material renders it unqualified to sustain life longer than a limited period.

As the result of a reduction of the spermatogenic power of the cells, decrepitude commences after man has reached the half century mark, and without the interference of any kind of sickness, the quality of the tissue is perceptibly reduced every five or ten years thereafter, the potentialities pent up in matter after the age of fifty has been reached, becoming less and less qualified to sustain life.

This is a purely physiological process, granting the absence of extraneous influences.

Common sense teaches us that an increase of the spermatogenic power of the cells cannot be brought about by any other means than those which promote organization, nor if the tissues contained the normal proportion of the natural elements of their composition could there arise any regressive transformation.

Our theory reasonably maintains that it is not impossible to formulate in the laboratory the true albuminoids, which now require so much energy in their elaboration in the body, and bring about a gradational inferiority of tissue-producing power which is one of the primary causes of premature cellular decrepitude; but once we can obtain the matter of supply in an already assimilated form, we lessen the energy of the body necessary in their production; therefore, when in the laboratory nature's forces can be utilized in

the same manner demanded by vitality itself, then shall we have attained the means towards the preservation of life far beyond its present average length.

Congestive conditions of any highly vascular part of the body cannot take place till the extreme limitation of physiological vascular dilation has been reached, after which congestion commences; in this case the vaso-motor nerves controlling vascular movement are overpowered by the blood pressure in the vessels, resulting in congestion, as in pneumonia, etc. Here is manifested the limitation of physiological functionality, and the muscular tissues have been overpowered by their inability to contract upon the blood contained therein, and the vaso-motor nerves have lost their power to contribute energy to vascular movement.

Now the question arises. How can we restore the lost balance which has disturbed the potentialities to permit this state of congestion?

Does not common sense answer, by those means that originally furnished their power?

It is a well-established fact that suppuration is one of the consequences of congestion, manifested by a high temperature and chills; now, according to the theory under our present consideration if the potentialities can be controlled or modified, we can reduce the speed of burning, and prevent the process of suppuration, thereby removing two of the most important conditions which give rise to degenerative changes. In congestion the vessels of a part contain just that amount more blood, equal to their increased calibre beyond physiological dilatation. The chill from cold causes the vessels first to contract, which must be compensated for by additional dilatation, at which time more blood enters into an organ to produce congestion; in which case vascular change should be prevented; so the activity of all the vessels of the body could be continued without degeneration taking place in their coats, as the giving way of them, from solution of continuity, or rupture, produces serious consequences.

Only second in importance to the nervous system to continue vigor through a perfect apparatus, is the vascular system; normal tissue depends upon the intervention of these vessels, and the power to bring this vigor about and render to them immunity from disease would be a great step toward prolonging human existence, since they convey pabulum that ministers to all those nutritive changes going on in the body, and all matter transformed for nutrition is conducted by them into every part of the system.

The importance of acquiring power to prevent the regressive changes by promoting the durability of the vascular system cannot be overestimated, and this can be done only by introducing the matter from which they were originally formed.

Thus we show that the potentialities or forces peculiar to protoplasm are the forces that sustain intermolecular movements of the atoms, thereby aiding in the internal respiration of the cells and their selective office of selecting, appropriating and defecating.

These forces direct chemical (internal) and physical (external) transformation, and as they gradually cease to act, there is a corresponding deterioration of tissue, rendering it less qualified to sustain life.

As food supplies energy, and as metabolism is sustained by the activity of the potentialities, it is evi-

dent that to increase chemical and physical transformation, we should formulate in harmony, with the molecules' requirement.

Many of the carbo-hydrates are indispensable in forming the complex compounds upon which tissue formation depends; and as these bodies are the derivatives of the food transformed into the matter of assimilation, the reason of emaciation, owing to their absence in the diet of a diabetic subject, becomes evident, for he suffers from a loss of the derivatives of the sugar that is not split up in nutrition.

The same may be seen in malignancy in the loss of body albumen independent of how rich in albumen the diet may be. The loss of nitrogen is also excessive; the atrophy of the muscle cells is a conspicuous feature.

Let it be understood that life requires the sum total of the activities of the potentialities pent up in the different chemical elements and compounds contributing to the formation of the body, but the potentialities of those elements which are never found in the body promote disorganization, instead of normal organization.

The analysis of the body composition shows that nature selected from the chemical world those elements which are most abundant; oxygen, hydrogen, nitrogen, carbon, sulphur, phosphorus, fluorine, chlorine, sodium, calcium, magnesium, silicon, iron and many of their derivatives.

A knowledge of the specific changes in the process of pathological transformation may be found by the means of eliminative chemistry and the information gained by the aid of the microscope, spectroscope, etc.; by these means may be found how far the proteids, crystalloids, colloids and the fluids and solids have departed from their normal integrity and merged into pathological conditions.

By contrasting this pathological condition with the normal physiological state, we will by analogy be enabled to formulate from a scientific, rather than from an empirical basis, and so introduce the compatible requirements evidenced by the condition of interruption, thus restoring chemical equilibrium.

A complete system of therapeutics is thus suggested. Select from the three kingdoms those elements entering normally into the chemical composition of the body, those being wholly compatible, all else incompatible, then every remedy formulated would act harmoniously and invariably the same under all conditions; thus a complete and scientific system of therapeutics: a condition which seems likely to be perfected into an established fact in a near future, for with all our advances the past twenty years, we do not seem able to cure disease with the old remedies; doubts and uncertainties still prevail regarding modern research and will continue to do so until the absolute requirements to render the citadel secure are formulated along the lines suggested in the above reasonings.

The medical profession, indeed all institutions of learning and scientific bodies in general, should encourage everything that tends to serve humanity. All knowledge contributes to the advancement of civilization. We are not becoming masters of disease under the germ theory, we may become so under the transmission theory; considering more exhaustively normal instead of abnormal fermentation.

While allowing that infectious diseases are of a para-

sitic nature, it may be asked what condition exists that permits germ attack? Is it not a decrepitude of the cell? An incipient disorganization? If the condition be not favorable the parasite remains perfectly harmless. Elevate organization in devitalizing processes and the environment for germ activity ceases to exist.

When the potentialities of matter are normally active they resist decomposition; by promoting their activity we may render the body able to battle successfully against invasion of its enemies. By continuing their activity we can prevent all putrefactive processes, which are a consequence of parasitic activity.

A knowledge of the changes concerned in the histochemistry of man is of vital importance. Let us understand more thoroughly the action of the potentialities of matter.

Disorganizing processes will never be overcome by inoculation of foreign matter. Elevate organization by internal medication of nature's required chemicals, is the only possible ground for success in overcoming the disorganizing processes.

Abnormal chemical differentiation of the proximate principles of nutrition, the crowding out of the amorphous mineral matter and substitution of crystalline matter, is the cause of increase of consistency of organs or parts. This is seen in pneumonia when the potentialities have lost, to a certain extent, their power of control.

The non splitting up of starch by its ferment as seen in albuminuria is also due to an interruption in the play of the potentialities. It is a question if the tubercular diathesis could manifest itself if there were not a premature cell decrepitude of the lung tissues, which is a process of disorganization, permitting microbial attack.

Tuberculine inoculation is here unscientific, being noncompatible, consequently dangerous. As the potentialities of matter are susceptible to disturbance in the exhausted subject, it naturally follows that they are the ones most susceptible to contagion. Healthy people are naturally immune, as the potentialities are normally active in these cases. If we can prevent disturbance of the potentialities we need not fear pathological processes. As these forces preside over all molecular activity, and as they gradually cease to act there must necessarily be a corresponding deterioration of tissue, hence it is evident that to increase chemical and physical transformation these forces must be administered to, thus aiding nature in the sustaining of the life association, and the cure of disease.

The writer believes that nitrogen is the originator of locomotion, as in its absence it cannot be made to take place. It is the prime factor in the cause of energy. It possesses great electrical potentiality. The respiratory process probably originates by its rhythmic explosion. It is the most powerful essential to the movements of all bodies. The nitrogenous compounds used in medical treatment are directed to the central nervous system, and if it is these nerve centres that originate the incentive to locomotion, intrinsic motion arises and is sustained by the nitrogenous series combined with the carbo-hydrates.

The following argument shows why we assume these theories, and also what relation nitrogen may bear to malignancy.

We know that liquid air under pressure assumes solid form. Atmosphere is 4.5 nitrogen. Liquid air may

be freed from oxygen as liquid air is the coldest thing known. Nitrogen is very cold. May not the sun be nitrogen in condensed form, for between us and the sun is mostly nitrogen (apparently). Is not nitrogen the light bearer, or a form of light bearer? There is no electricity without it. From experiments by eliminative chemistry we know that the best insulators are those that are in some way associated with nitrogen. Light attracts light. Affinity is potential all the time. Chemical affinity becomes active by passage of light through matter. This chemical affinity not considered by chemists whose attention is given wholly to results. All light is from the sun; chemical affinity with nitrogen is the sun. Nitrogen not confined radiates, and causes it to be explosive; it radiates to something naturally its affinity.

The sun draws everything to it as a center. Like attracts like. The sun attracts nitrogen (more potentiality) and in attraction only we have light, the visible expression of heat, and heat is a cause of motion, so indirectly nitrogen is the cause of motion, naturally so, being the most potential of elements. Probably it is also the cause of crystals assuming different forms and shapes.

The two least numbers of sides of crystal are three, then cubes and so on to infinity. Why should they assume these different forms? What is the cause of a cube or pentagon? Crystal is a secretion of particles. What shape is an atom? It must have form. It is these different shapes that gives us the prism, that reflects sunlight which can be mathematically measured. From these sides to infinity—any multiple proportion. In crystallography a body gives out when heated (a law) the same colors it took on when cooling—now, then, when we come to get a compound that is of great density, through which light will not pass perceptibly, as in pathological specimens, a question arises if they do not contain just as much light in a potential form as when light passes through when they are in a healthy state. Does not crystallizing obstruct the speed? The light certainly is there as seen in coal, which is crystallized sunlight. Nitrogen is the potential of electricity. Electricity is the one thing, the other ones the expression and are known only by their activities.

Nitrogen may have been one of the first elements formed, and the most continuous according to this reasoning. Heat is drawn from the atmosphere by molecular agitation. The cause of motion is the unvarying inclination to combine in the elements, like attracting like; the greater attracting the lesser. Light is the visible expression of heat, electricity is, is it not, the whole thing, the whole cause? It is produced by the agitation that causes heat, only more intense, proving that it is more continuous. We could not see light if it was not in us—could not have the sensation—the vibration.

An exhibition of agitation in the same key of music shows an almost continuous aggregate. The arrangement of seven primary colors—senses, seeing, hearing, etc., shows octave. Same thing probably (?) in chemistry (yet to be demonstrated, and if so, many problems may be solved) and crystallography hence a perfect nomenclature of chemistry.

Nitrogen and carbon and all other elements are only so-called elements. Nitrogen always radiates from the centre—carbon to the centre by accretion of particles to form crystals—the diamond the best as

the action of light forms the prism. Nitrogen seeks its own affinity pent up in matter of the earth, proving formation and transformation—all motion.

Thunder—friction of molecules in contact with carbon—cause of sound. Volcanic expression caused by expression of nitrogen.

What makes the vine encircle the tree, the vegetables seek the sunlight? Is it not the potentiality of nitrogen seeking its affinity, and using the plant as a means of transformation?

The inorganic is from within outward, the organic from outward to within.

Why should electricity choose copper? Because the tensile strength is great, crystallized but more friable, the nearest to the amorphous in a crystal form—nearer to the continuous. The nearer we approach to the amorphous in any form of matter, the easier the electricity passes through it. The human body by the same reasoning should be kept near to the amorphous, the colloid—the more nitrogen will thus pass through; so the greater the metabolic activity, the more life in its association. Lightning is the visible expression of heat as evidenced by expression—which is motion caused by a greater or lesser amount of nitrogen.

It is an accepted theory that oxygen is the cause of animation. The action of nitrogen inhaled with oxygen in the air is not understood nor has it been to any extent considered. We propose to prove that it is the action of nitrogen taken into the body as food that completes its cycle of formation and transformation in protoplasm when it unites in the air cell with the nitrogen of the atmosphere through the law of like attracting like, which is nothing more than the universal law of gravitation. The human body will be then simply proved to be the highest known order of machine, with an explosive used of the very highest order known and which explodes at the lowest possible temperature, giving it the greatest energy. The potentialities of the bodies acting as the spark to explode the electrical potentialities pent up in the nitrogen.

It is our claim that nitrogen is the origin of the Armature, it being the potentialities by which all matter is controlled through its chemical affinity which it does in more complex forms than any other element or so-called elements.

The thinking power of man or life only acts through nitrogen because it is the cause of motion. Motion is never annihilated. It is either of potential or kinetic energy (viz., stored or liberated energy). It is nitrogen acting in the form of kinetic energy in the electric current which splits up all chemical matter, being converted in its action into chemical potential energy by being stored in the separate atoms, being changed again into kinetic energy when called upon for activity. This is only represented in activity when a larger amount meets a smaller amount. All nature by transformation tending towards an equilibrium or from heterogeneity to homogeneity.

When one part of matter is at rest another part is set in motion.

All movements on the face of the earth except the tides can be traced to one source, the sun's rays.

Can any one instance be shown of oxygen or even hydrogen or any other element uniting with another without the aid of nitrogen? Then from whence

comes the vivifying power of oxygen?

Food taken into the body acts simply as a nucleus for action, hence we have from the sun a solar respiration. There is a union of the energy, nitrogen or electricity from the sun which in reality is solar breathing with that of the earth by its action through a living body as a magnet, so to speak, the two legs simply acting as the positive and negative poles; when there are more or less than two, it will be found that they are invariably paired or else it is a deformity, causing an incumbrance.

It should be understood that man or any animal is simply part and parcel of that grand universal whole, the specific difference being in the endowment of reason and intelligence; the whole being controlled by the sum total of all which is nitrogen. Nitrogen stands to matter as life does to nitrogen. It is only through the activity of nitrogen that we are indebted to our emotion, instincts, thoughts, ideas, etc. Thus the world of the internal as well as the external sense obey constant and unvarying allegiance. There is where the monistic doctrine ceases. Psychic differentiation receives its reciprocal response from all the forces exerted in the production of crystals of every kind. Thus the psychical blends with the material and sensation is established. Hence comes the requirement for the highest order of the material of matter as evidenced by the seminal fluid of the positive body for the transmission of life impulse to the nucleus of the negative body of the female.

Psychical transmission can never be measured by chemical means. One is infinite; the other finite. The infinite uses the finite as a nucleus. Matter has not the power to generate thought, it is only the nucleus of its action. Thought is a manifestation of a life impulse acting on matter by the aid of the stored electrical potentialities, by the rhythmical explosion of nitrogen transmitted along the fibrils of continuity in a more or less forceful manner, according to the requirements.

In the study of natural law (the relationship of life to matter) man must be toppled from his pedestal of being created in the image of his Creator and looked upon as being a very small, a simple part and parcel of that grand universal whole. The same as the earth itself which is, one might say, infinitely larger than a human body and yet is only a very small minute part or parcel of that grand universal whole.

It is a recognized fact that the power of thought is favored by a dry rather than by a moist atmosphere, viz.: an atmosphere in which the percentage of nitrogen is the greater, the same as electricity is more potent in a dry than in a moist atmosphere.

In stating that nitrogen is the cause of muscular activity we are going contrary to the accepted theory of muscular activity, which is: that muscle work is performed by the aid of material free from nitrogen, thus causing it to appear that the carbo-hydrates are the source of muscular energy. Our theory is that the carbo-hydrates are nothing more nor less than the material nucleus used up by being used by nitrogen in activity, which sustains no loss, deriving its power from the reciprocal action between the nitrogen in the atmosphere and that contained in the cell nucleus as beautifully illustrated in radio activity; thus showing that the carbo-hydrates are the end products of decomposition due to the work done.

Oxidation is not the source of muscular energy, yet we have in the decomposition of carbo-hydrates a great amount of heat. The nitrogen of the cell in its inability to unite with the nitrogen of the atmosphere is a probable cause of malignancy, as there is no internal respiration of cells, the oxygen not uniting with the carbon.

TO DIE OR NOT TO DIE OF TUBERCULOSIS.

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TO die or not to die of tuberculosis is the foremost problem that now faces American population. Where people, for themselves and their children, are too indifferent and self-conceited in set ways of error regarding their mode of living from day to day to adopt more enlightened and sensible practice of caring for the preservation of health, there "Ephraim is joined to his idols" of blind and stubborn sacrifice that stupidly resists the wisdom and instructions of God and nature for safety and deliverance from the gaping scorpions and smother of the great white plague. Like the gift of salvation from sin, those who sincerely and actively accept nature's defence may enjoy the liberty of its blessings through protracted life; while those who blindly neglect or reject the salvation of sanitary breathing-air will certainly corrode the inheritance of existence with the bondage of degenerate waste, the relentless gnaw and exhaustion of lingering death.

Nearly two decades ago I began to earnestly preach and teach in medical and secular print the redeeming gospel of fresh uncontaminated breathing-air in homes, in work and business places as substantial defence against prevalent forms of disease, especially those considered contagious because of recurrence or coincidence in families. I also insistently championed the release of humanity from the brooding ghosts of hereditary consumption, lugged into mortal anticipations and phlegmatic acceptance from days of yore because an unfortunate relative, near or far away of lineage, had died of that tenacious scourge.

Reasoning on the line of fresh air antisepsis as antagonistic to the "germ theory" or bacilli ferment doctrine as the cause of disease in general, it appealed to my judgment with irresistible force that contaminated breathing-air, by lack of oxygenating quality was the natural and persisting source of disease through a process of auto-poisoning that worsted the system in one form of evidence or another according to the natural bent of circumstances, while the generated ferment of bacilli followed in process, rather than preceded the morbid conditions. Applying this analysis to the occurrence of consumption, it became transparently evident to my mind that tuberculosis in general was an acquired disorder of the system through bad aeration and defective oxygenation of the blood and nutrition, instead of being any hereditary curse from parents to offspring. And I have tenaciously clung to this rational comprehension. Already it has proved itself the most correct working hypothesis ever known—else the fresh air treatment would never have developed its acknowledged value and popularity. Fourteen years ago I recorded these convictions of incontestible rationale of consumption,

and have steadfastly reiterated the same to my clientele in person and to our profession in public print. I especially insisted on the harmfulness of the carbonic oxide gases that hovered in homes and business places from the combustion of common fuels used for heating and for lighting rooms that were kept too close with their accumulated house dust and re-breathed breaths. For several years I seemed to stand quite alone with these views, but I stood because the truth was behind my position. The postman would occasionally bring a little letter of inquiry from some medical reader; that was all. It is not my wish to revert to this feature of experience on my personal account, but to illustrate how a fact may gradually root itself in unprejudiced minds and develop a priceless harvest of benefit to the world. To-day the great Pennsylvania Society for the Prevention of Tuberculosis announces to humanity that consumption is not an inherited disease, but is produced by living in unsanitary breathing-air, that consumption is a home-made disease. In the course of my article on "What Of The Lungs?" fourteen years ago I said:

"There has been a monstrous deal of sophistry talked and believed about the HEREDITY of certain diseases which doctors failed to restrict or cure. As a medical propaganda that doctrine is neither just nor useful. It scandalizes parentage through all generations—a veneer of pathological heresy—a verbal scapegoat for ignorance or incompetence. Elsewhere I have endeavored to demonstrate that unless a child is born with a disease it has not inherited that disease, since its parental physical heritage consists of just what constitutes its organization when born—every atom of which is eliminated after weaning, and is replaced by material elaborated from the nutrient table of supplies common to childhood and youth and adult life. The common daily environment of families, their habits, modes of housing, generation after generation, are very much alike. As similar causes result in similar effects, why should not the diseases of children resemble those of parents at similar stages of experience? So then, as to the lungs and systemic constitution, the chief component of family environment is the breathing-air which they habitually respire. After thirty years of practical study of cases of phthisis and their inductive environments, I have reached the candid conclusion that three-fourths of the pulmonary disease (which includes pneumonia), and that enshrouds the homes of population is induced, not by hereditary predisposition nor by infection from other cases, but by the rasp and ravage of degenerate and degenerating breathing-air incident to house-air customs and conditions of personal mismanagement. Also I most confidently believe that the old tradition of broadcast transmission of consumption, by the initial effect of parental conception of offspring, will in the near future melt away before positive evidences of the actually constant deteriorants in the inhaled air which wear on the lung tissues, which impair the blood corpuscles and the eliminative functions of so many individuals from birth till death. By the fact that the breathing organs are those most directly under the influences of the breathing-air, and also most numerously involved as cause of death, it convincingly follows that abnormal and prejudicial qualities of breathing-air indoors and outdoors are our most productive

agencies of degeneration of the human constitution. A trained taste is the gustatory guard for the stomach's three meals a day, while the neglected lungs with ceaseless action swing their twenty-six thousand tainted respirations every twenty-four hours like open gates to the unrecognized and unthought-of gaseous and other contaminating foes to normal health. Even disabled lungs must continue their motion without repose—must continue their respiratory transfer of impurities to and fro without a minute's respite while the heart continues to beat. Therefore, any diseased process in the lungs tends to be progressive, so long as the air inhaled continues to convey toxic elements, and hence said diseased process must daily widen the cheerless gap between health and hope. The only sensible means to 'down brakes' on the process of tuberculosis is to take into the lungs pure antiseptic breathing-air with every breath day and night." There you have my own prophesy of fourteen years ago.

Fortunately in this country one mind does not rule all the thinking. Dr. Lawrence F. Flick, of Philadelphia (for whom I bespeak a memorial in bronze), took active hold on the practical fresh air demonstration for the treatment and arrest of consumption in its early stages. Nine years ago the nucleus of the White Haven Free Hospital for poor consumptives was inaugurated to its expanding career of fresh air treatment—with Dr. Flick at its head. The Phipps Institute in Philadelphia opened its beneficent doors for the study of tuberculosis a few years later, also under the management of Dr. Flick. The Pennsylvania Society for Prevention of Tuberculosis then spontaneously crystalized into active existence through Dr. Flick, and now with Dr. Dixon as State Health Commissioner its official chief. Fresh air sanatoriums have arisen in various parts of the country for relief of consumptives. They are all under efficient management. A great revolution in the estimate of tuberculosis has taken the field against its spread. State dispensaries for consumptives are reaching helping hands throughout the Keystone State. Other States are sure to follow with their efficient physicians and trained nurses to instruct all families where the disease has appeared. Dr. Flick, who is a recognized authority, affirms that the great campaign against consumption would have been started long ago were it not for the fact that there has been "a fatalistic feeling that consumption can't be stopped in its course." He affirms also that science has proven that the impression that consumption is hereditary, transmitted from parents to offspring, is not true. He says furthermore that if consumption could be transmitted at birth from mother to child, the human race would have been wiped out long ago. Another great thing that Dr. Flick recognizes reads thus: "The case in the first stage can generally be arrested by abundant egg and milk diet and observation of the rule that *the same air must not be breathed twice*. We advise the egg and milk diet not because the combination has any miraculous power of itself, but simply because we have found out that it gives the patient the greatest amount of nutrition with the slightest amount of waste. The bacillus of tuberculosis was not intended by Nature to carry on its present work. Its original mission probably was a very worthy and necessary one—to destroy the inorganic matter upon the

earth. In that capacity it would by no means have been a menace to the normally healthy man." We therefore perceive by this eminent admission, how nearly the spokes are loosening from the wabbling wheels of germ doctrine revolved as a conventionalized machine of tuberculous infection. This brings us now into direct touch with the important tuberculosis exhibit now presented in this city by the Pennsylvania Society for the Prevention of Tuberculosis.

This exhibit was opened November 20th, and continued its impressive lessons for ten days. Even a glance at the program of lectures delivered is instructive to the reader. Dr. Charles J. Hatfield is now president of the society. Dr. Livingstone Farland, executive secretary of the National Association for the Study and Prevention of Tuberculosis, addressed the large audience on opening night, subject: "The Crusade Against Tuberculosis." Dr. John S. Fulton, secretary-general, International Congress on Tuberculosis, spoke on the coming Congress, which will hold its next meeting in this country. The lectures continued daily. Among the principal ones, Dr. Hamill talked on "Prevention of tuberculosis in early life." Other subjects discussed: "Tuberculosis Classes," "State Dispensaries," "Municipal Control and Registration of Tuberculosis," "Influence of Labor Unions in the Prevention of Tuberculosis," "Evils of Patent Medicines in T.," "How Churches and Sunday Schools can help in Prevention of T.," Dr. Brumbaugh, Superintendent Public Schools, "T. and the Public School Question." Dr. Flick talked on "Tuberculosis in the Home." Miss Mary Richmond, general secretary, Society for Organizing Charity, spoke on "Organized Charity and the Tuberculous Question." There were many other instructive speakers. I have shown the wide field of practical interest that is being reached in public thought, and how many ways suggest themselves by which to resist the common danger about population. One special aim of the Pennsylvania Society is to make its offices a permanent clearing house for those who have tuberculosis, for those who are willing to engage in the crusade against the disease, and an employment agency for those in improved or convalescent condition who should henceforth lead an outdoor life—preferably in open country places. It is a grand beneficent outlook that the Pennsylvania Society is prepared to face for subduing the wide sweep of consumption. Note the dead line that must be broken. Tuberculosis killed in Philadelphia 3,627 cases last year. It causes one in every seven and a half deaths. It costs this city about \$22,000 a day, or over \$7,000,000 a year. It is conceded that consumptives under regulative control are not dangerous to the community. It is scientific belief that the disease can be practically suppressed as soon as all consumptives are reached, specially instructed, sanitarily regulated, and public measures against infection enforced. At present about nine out of ten consumptives in Philadelphia must be treated at home. Compare this state of the situation to the tuberculous cases of the entire Commonwealth—to the entire scope of the United States. In drafting its outline of work the Pennsylvania Society for prevention of tuberculosis has adopted a bureau of information for the benefit of tuberculous patients, for physicians, for institutions, for all interested in the care of consumptives. Office, Room 53, De Long Building, 13th and

Chestnut Streets, Philadelphia. As an object factor in educating the community the Tuberculosis Exhibit is made a strong and striking feature. Never can a visit to the Tuberculosis Exhibit be forgotten.

I repeat within limits: No one of intelligence, adult or youth, could carefully gaze at these preserved specimens of the destructive work of tuberculosis without a realizing sense of insight that revolts against the chance of ever becoming a victim of phthisis. Each can see for himself how the lung structures are cut off from their respiratory service to life because of being riddled by disintegrating waste, tunneled by formations of cavities that failing nature tried to patch out but could not hold, worn away by continuous process of decay inaugurated and prolonged through lack of clean oxygenating breathing-air amid unsanitary quarters. Each for himself can see how the kidneys are transformed into a dotted mass of tubercles or carbonaceous—yes, carcinomatous deposits from deoxidized blood cells in their fevered course of burdened circulation. And there are the liver, the spleen, the mesentery woefully distorted from fitness for normal function by deposit of transformed material gone to the bad by lack of sanitary aeration of the blood on its luckless mission to the disabled lung cells. Furthermore there is the poor trachea, furrowed into canals of its mucous lining by the invisible plow of down grade disorganization, its wretched debris coughed out in disgust with many a retch and gasp and strangle. Such object lessons cannot fail to impress upon the visitor the grand blessings of prevention to be simply won by avoiding the grind of excessive fatigue, the wither of night dissipations in the rot of crowd-air, by shunning the rasp of blighting fire-gases, the linty muffle of house and factory dust, the despoiling abuse of home and business places by the stifles caused by lack of fresh air ventilation. As the visitor passes to the next jar perhaps his gaze takes in a view of those distressed intestines bitten into patches by the inexorable gnaw of dissolution that consumed body and vitality together.

Attracted by a voice near by, we step aside a few minutes to note a very intelligent young physician, filling in an ad-interim lecture on how to avoid consumption—presenting to a group of interested listeners the importance of abundant nourishment to counteract tendency to reduction of weight—extolling the superior value of large quantity of raw eggs and of milk as furnishing an ideal form of nutrition. Personally I have acquired a dislike for milk because of the uncertain condition of cows and of the careless or dirty mode of drawing milk from the cow and shipping it to market. Not wishing to contemplate the milk question, I resume inspection of the morbid specimens. At the other end of the long table was a large exhibit from the laboratory of the State Live Stock Sanitary Board of Pennsylvania. And, sure enough! there was a jar containing sample of miliary tuberculosis of a cow's pleura covering the ribs. Another of tuberculosis of lung and intestine. Another of the larynx from a cow. One of tubercular pericarditis. Another of cavity formation in lung. Another of tuberculous lung and diaphragm from cow. Another of uterus of cow. Several jars showing tuberculous lungs of calves. One specimen conspicuously repulsive was that of the tuberculous udder of a cow. So there we are! Whose cows shall infallibly produce the proper quality of milk for con-

sumptive patients to copiously drink? I noticed that most of the lecturers talked milk, milk, eggs, eggs, never reminding the public that cold storage eggs, stale eggs, are a long distance usually from fresh eggs in sanitary qualities. The quality of blood obtained from foods must naturally in great measure depend on the quality of the food ingested. What is absolutely needed is high grade of blood, blood that secures sound tissues, sound organs, firmness of bodily health that defies any and all harm from what they yet call disease "germs." As one of the speakers put it—the best killer of "germs" is the body itself. It is coming—the day when the prowess of "germ" ferment as the positive cause of disease will be left without head or tail of proof. To my mind there is and always has been something incohesive in the "germ" theory as cause of all diseases and of the application of practical means for relieving and curing said diseases attributed to germs. I submit that incohesiveness has never yet won a permanent victory of truth for mankind in this world.

There remains something to be yet learned from the simplicities of mother Nature. On my investigative visits to this tuberculosis school, my brain and ears were kept awake to catch for "breaks" of inconsistencies in the toggery of germ application to the subject of tuberculosis. Although the instructors in their talks, by routine modern habit, laboriously pinned the "germ" idea to the lapels of their argument in courtesy to the prevalent surface code of disease, after a few more sentences they would fall back to the level logic that practically denied their professed faith in the trap-door of inference because a few "bacilli" have been found in diseased and decaysome matter. It was almost funny to listen to an elaboration in substance of by how many ways the "germ" of tuberculosis might reach the locations of its pathological exploits. For instance, how the "germ" might enter by the mouth, be swallowed, traverse the churning Niagara of the stomach, launch into the eddies of the mesenteric glands, switch out into the rectified flow of nutritive fluids, enter with these into the swim of the blood current, pass successfully the pumps of the heart, and finally reach a hospitable working port in the accommodating lungs. As already stated, later on, towards the close of the lecture, the pathologic spell-binder would suddenly feel compelled to reverse brakes, let his audience down to anchor ground and the grand facts of Nature by declaring that consumption is not a contagion, and therefore not spread by germs, that it is not infectious, that it is a home-made disease, that fresh air and sunshine annihilate all danger from germs, that the disease is a result of fag and physical depression from over-exertion in bad air, from the exhaustion of late hours expended in work or pleasure-seeking, from indulgence in the use of intoxicants and unwise exposures, from the lack of sufficient ventilation when at work and during hours of rest. They reiterate, again and again, that persons who have brought on themselves the dangers of tuberculosis will really cure themselves at home by living in fresh air, by the careful use of a pocket cuspidor frequently cremated, by sleeping with open windows the year round, by keeping the house free from dirt and dust, by avoiding the use of any dust-lifting broom in a dwelling or work place, by using a damp mop to remove the villainies of house dust, by sleeping alone in the bedroom whenever possible, by living on good diet including a

continual stuffing with eggs and milk. Now all this is more easy to talk than always easy to do. However, it indicates a world of good sense as compared with the microbe dream as an aggressive sneak into the citadel of human life—other chances being equal.

The third self-imposed task of the Pennsylvania Society is called an educational campaign. It is to be conducted through co-operation with churches, schools, factories, stores, fraternal organizations, clubs, by means of lectures, circulars, special notices. It will prove a great step of advance against the subtle unchallenged spoliation of human effectiveness by tuberculosis. The charts exhibited appeal to interested attention. By them astonishing data is revealed to serious recognition of prevailing facts that will arouse a picket guard of vigilance against the sneaking foe so often home-bred to sack, it may be, the dearest interests of family and companionship. As an investment, enlarged information on the laws of good health and the penalties endured through disease make up their own balance sheet—but according to the way we deal. Ignorance alone is to be pitied and in need of sympathy were it not true that ignorance in sanitary observances becomes a public menace. It will require years to achieve anticipated victories over tuberculosis by education of the people. Thousands are on the way to subjection to the scourge to-day. In the course of years most of these will have petered out the miseries of their existence. In ten years the masses may be taught how to exercise watchful regard to the conditions that will exempt them from the martyrdom of consumption. Dr. Flick is reported to announce that in fifty years, through the enlightenment of broadcast education, consumption may be known only by its name. That is a glorious outlook. I believe it possible. Consumption and typhoid fever are two of the most preventable forms of disease in the world to-day. But look at the instructive charts and photographic illustrations. Just a nip from the dreadful mortuary tables—deaths from tuberculosis in towns of Pennsylvania. In Philadelphia, over thirteen percentage of all deaths. Pottstown, thirteen percentage. Lancaster twelve percentage. Reading, eight percentage. Harrisburg, nine percentage. South Bethlehem, twelve percentage. Scranton, five per centage. Mahanoy City, three and a half percentage. This is the lowest death-rate reported of twenty-seven towns in the State. I practised medicine seven years in the latter town in the sixties. During that time I attended two cases of consumption only. These were cases of what is known as "miners' consumption," an occlusion of lung cells with deposit of carbon from lamp smoke and powder smoke in the underground channels to the breasts of anthracite being blasted loose for removal. The sputum was usually dark as soot. The mountain air at Mahanoy was absolutely sweet with its oxygen and ozone qualities. The drainage, from the topography of the town, was swift and complete. The cases of consumption were of men who worked in the underground mines only, and hence the percentage so low as compared with so many other towns. I know there was not a shut-up cell of an office in which to cram stenographers or accountants, neither a jam of thousands of eager mortals to poison the breathing-air of salespeople in any money-mad business arsenal in that mountain town.

Let us glance at another instructive exhibit. Here is a photographic representation of a certain downtown unsanitary location that creates consumption. It is a negro quarters along a narrow alley but three to four feet wide. There are five houses facing blank wall, with one hydrant for all, and fifty privies in an archway at the rear. Lamps are used in these rookeries all day. To get outdoor-breath in summer little shelter tents are sometimes put up at the doorsteps over pools of stagnant water. A room is shown. The consumpted man lying on a cot in one corner; a child leaning against the open door; a stove in operation a few feet from the sick man's cot; a small table opposite, by which an emaciated woman is finishing the ironing for some employer, and by which also she may earn a few shillings for relieving hunger. Take a scene in an Italian quarter. Rubbish dumped wherever there was a niche to chuck it. One hydrant for each row of six houses. Twelve toilet compartments for back to back houses along one side. A house built over an open privy well which infects the cellars near by. We will bear in mind that this is an old, old part of town, crammed together on the frontier of the earliest start of Philadelphia. We will glance at the next scene. The yards of six houses open to reach one hydrant. Besides the families, the tenements are crowded with cheap lodgers of low degree. Surface drainage over defective pavements leaking into offensive privy wells. Here is a glance at rag pickers' alley—filthy, stinking rags! Italians. Eighteen families in tenants' quarters, served by two hydrants and three toilet compartments. Jewish quarters—nine houses, rags stored in cellars; one hydrant the sole water supply, privies close to houses, vaults offensive, and a stable discharging liquid offense over surface. A family in three rooms had eighteen lodgers. Forty-five Italian families shared one toilet compartment with families of other nationality. Conditions and breathing-places like these breed tuberculosis by job lots and wholesale. What is the application? The lesson to us and to everybody is this: avoid bad drainage, avoid overcrowded rooms, avoid tainted or toxic house-air, avoid privies in proximity to homes and sleeping rooms, avoid stoves and lamps in unventilated rooms for any purpose, live in the open away from back courts, from stables and all sorts of poultry coops, from swine sty, cow shed, house privy, all shelters that smell of excrement. I have been acquainted with a very respectable and interesting family with home in the open country. But the malodors of their offensive hog-pen and the accumulated manure of the neglected chicken-house were usually present at the back door and windows of their comfortable house. Also their cellar was generally disposed to be springy with water, so that stones and boards were needed to walk upon. Three daughters and two sons, after reaching adult life, died with consumption in that house since I first knew it. As those deaths occurred several years apart, there is no chance for "germists" to toot a whine about a succession of infection from each other. Sanitary education will mean a great deal for the prevention of tuberculosis to folks who will not passively consent to sit down to the do-nothing lot and luck of depraving environment. What Dr. Flick and his coadjutors evidently mean by clean-

liness certainly implies not only a vigilant cleaning up of rooms and house, but also a realistic cleaning up of breathing-air environment outside of the house. The air comes from the outdoors if it comes at all. Consumption is made—not caught. Consumption is a resulting rot from feeding the lungs with depraved and blood-defaulting breaths.

The fourth self-imposed service to humanity planned by the Pennsylvania Society for Prevention of Tuberculosis is an employment exchange for the benefit of convalescent and arrested cases. When for any person the fresh air treatment at any sanatorium has proved available in arresting the tubercular process, any reasoner can perceive that the gain will be lost by returning to the mode of life by which the disease took its start. "George, when you are done looking in here, you will want an outside job," said one young man to his companion within my hearing at a visit to the exhibit. His words aptly fit the requirement of everyone who has been hazed by even the cuff of tuberculosis. Rescue implies escape from relapse. Usually sanitary employment will in the main outflank disaster. A society that maintains a bureau to assist man and woman to occupations that prolong life and comfort does more than Samaritan service. It is not to be expected that persons on the verge of consumption will accomplish signal success by a strenuous chase after dollars. The temperate winning of comfortable livelihood will pay the happier dividend. For men of limited working capacity the society suggests gardening or vegetable truck raising, light farm work, collecting rents, soliciting insurance, light job carpenter work, watchman, gatekeeper, driving coach or light parcels wagon, caring for vineyard, etc. For women the choice is rather more limited. Mending or sewing on porch or in open window room, poultry raising, cultivation of flowers, light gardening, strawberry raising, berry picking in season, light nursing in houses where good ventilation is attainable. I know one woman in midlife who has built up successfully by the outdoor life of collecting contributions to the support of a charitable institution. Canvassing on salary leads many persons from the mould of sedentary seclusion to the refreshment of outdoor life. A lad of thirteen, who had been under treatment at White Haven, is being helped at home by his parents removing from the smut of the city air to a suburb location where he continues home treatment with open windows at night, with healthy color, restored weight, and excellent prospect of escaping early death from tuberculosis. In threatened subjects, both of youths and adults, the advantages of outdoor employments in decent air are of supreme importance. To this end a change of location may open a Paradise of home delight to many a family. The expense of removal is easily saved from the more useless cost of doctors and drugs. The mind either promotes or retards the cure in disease. Agreeable sanitary occupation is a wonder-worker against depression and pulls the dejection of disease out of its boots. To be housed in, out of play, out of work, deprived of earning power, propped up on the crutches of anxiety, dependent on the giving hand of benevolence, enslaves the ambition with hopples of helplessness and lowers the last bar of resistance to the plague of consumption. My late friend, Robert N. Stephens, wrote nine novels

and three dramas after his lungs began to fail; but he worked with the brace of fresh air, with windows open day and night, winter and summer alike. He wrought a neat livelihood for himself and wife, with several thousands of dollars left over at the end.

The fifth task set for itself by the Pennsylvania Society is the formation of tuberculosis classes intended to give curative treatment to patients living at home. Home treatment of poor consumptives will be encouraged in every way, especially by informing each inquirer concerning all existing facilities, for dispensary treatment, visiting nurses, special diet and disinfection. This feature has interested Dr. Neff, our local Director of Health and Charities, who is planning to provide for a central out-door dispensary in Philadelphia—with expansion of the system for similar dispensaries in other sections of the city where the needs are urgent. In trying to help the sick there is nothing like doing things. The fact of trying conveys a sense of comfort and inspiration. Better go down saluting the flag of hope than to sink in the waves of despair and neglect. Dr. Neff will ask councils for an appropriation sufficient to open the central dispensary—which includes expense of pay for the services of a druggist, two nurses, clerks, medical equipment and to purchase milk and eggs for patients. It is proposed to carry on the work among the poor or those who are unable to employ a physician to regularly follow up their cases. The afflicted will be taught how to take helpful care of themselves. Director Neff appreciates that many patients overlook their need of early attention, but with the reminder of gratuitous provision by the city will timely learn just what to do through the instrumentality of this outdoor dispensary. Since milk and eggs are now considered the ideal form of nourishment to counteract the tendency to emaciation, if patients are not in circumstances to procure them, Director Neff proposes that the dispensary contribute the essential supply. The dispensary will not have beds; but all persons who are tending toward tuberculosis will receive adequate advice from the staff physicians and nurses—the nurses to follow the patients to their homes, and there explain the proper modes of living in order to arrest consumption. Of course, plans and propositions require their time to mature. There is a wonderful lot yet in medical science that is guessed at, but not demonstrated. One fact that impressed me more than any other was the divergence of tuberculosis doctrine among lecturers as to cause and mode of spreading the disease. I hold that this is not as it should be. So much variation of theory and assertion dissipates the value of teaching to the laity. The public must conclude that so long as the doctors who pose as specialists do not agree, nobody can know what to believe. At this time I cannot enlarge on this vital point. But prior and preparatory to an opening of a tuberculosis exhibit, the appointed corps of talkers would evince better diplomacy as teachers by holding an hour's council together to discover whether or not their doctrines will sustain orthodox ideas or will break soil on disputed ground. Koch is credited with having discovered the tubercle bacillus. Koch has never demonstrated to other eyes that he could recognize the tubercle bacillus floating free and alone outside of tissues diseased with tuberculosis. The trap-

ping of a frog in a puddle never proves that it was the frog that caused the puddle. Let us learn more about the muck of the puddle and less about the tadpole.

While the late tuberculosis exhibit displayed here was smaller than the previous one, it was equally important. The illustration of the Sunnyrest Sanatorium at White Haven, independent of the original one under management of Drs. Flick and Welsh, presents an attractive resort for persons able to pay their way for its advantages. The Sunnyrest is handsomely laid out with walks, terraces, swards and trees, tents, private cottages, and advertises elegant cuisine for patients. How superior is this to wearisome or exhausting trips to Denver, to California, for clients from our Eastern States! The illustration also of the pioneer cottage sanatorium for consumptives, the Adirondack, at Saranac Lake, N. Y., attracted much interest to visitors. Let the world wake up to the physical mischiefs of overheated, close houses. To the sanitary meaning of fresh air always. To the simple means by which humanity may avoid dying with tuberculosis. To the curative potencies of Nature rather than of drugs for the arrest of the white plague. Instead of depending on patent medicines advertised for the cure of consumption, it is wisely claimed that if the 200,000 churches and the same number of Sunday schools in the country can be utilized in the mission of spreading the gospel of fresh air and cleanly sunlight in the home, the school, the workshop, in sleeping rooms, it would require but a few years to banish tuberculosis. The exhibit just closed will be moved about from town to town in Pennsylvania till the public generally may learn the valuable lessons that it teaches.

1726 North Twenty-second street.

Frequent Micturition in Women.—This most distressing and common symptom in middle aged women is wrongly known as "irritable bladder." (*The Hospital*, July 20, '07.) We should learn first if it be nocturnal. In some cases of uterine prolapse micturition is frequent only in the day-time. We consider three conditions: Where there is some change in the urine; where the trouble lies outside the bladder; where there is actual disease of the urinary tract from the kidney downward. Most cases are due to change in the urine—there is excess of urates or phosphates and hyperacidity; diet, digestion and sedentary occupations are generally responsible. Potassium citrate and hyoseyamus are indicated. The conditions without the bladder are tumors at the fundus of this viscus, early pregnancy, uterine prolapse, unilateral pelvic cellulitis and pelveo-peritonitic adhesions. In the third group of cases we may require the cystoscope, although the lesion may be discovered by urinary examination. Lavage is not needed in mild cases. Dirty catheters may cause cystitis, calculus, tuberculous ulceration, malignant growths, papillomata, varices at the neck of the bladder may have to be differentiated, as also stone in the kidney, renal growths, Bright's diabetes, movable kidney, pyelitis, pyonephrosis and renal tubercle.

THE RELATION OF GASTRIC SYMPTOMS TO SURGICAL LESIONS OF THE UPPER ABDOMEN.

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THE primary object of this short paper is to again call attention to the importance of a thorough appreciation of the pathology and the possibility of securing permanent cure of disease of the upper abdomen by the intelligent application of appropriate surgical measures.

While the general profession has become quite familiar with the symptom complex presented by surgical lesions of the appendix, the uterus and its adnexa, and also with the operative measures requisite for the permanent cure of such conditions, the same cannot be said of the pathological changes produced by disease located in the upper peritoneum, which most frequently concern the bile passages, the pancreas, and the stomach. Because of the anatomical arrangement of these various organs the most predominant symptoms usually relate to the latter viscus. These organs are more or less concerned in the process of digestion, hence organic disease involving any of them must of necessity give rise to pathological change which may threaten not only proper nourishment of the body, but life itself.

This close anatomical and physiological relationship has caused considerable difficulty in differential diagnosis and has been a reason for misinterpreting prominent concomitant symptoms, likewise with many general practitioners has been sufficient reason for making one organ (the stomach) bear the blame for all the disturbances noted in the upper abdomen.

Disordered function of any of the organs intimately allied with or concerned in digestion is alone a sufficiently serious problem with which to deal; but the relationship of the digestive organs to the great peritoneal cavity which is so resentful of insult and at the same time so careful to protect itself from local infection by the formation of inflammatory walls resulting in adventitious bands and adhesions, materially increases the danger to life and the consequent pain and discomfort seriously interfere with full enjoyment of health which is normally to be expected. It would seem, therefore, that from a diagnostic standpoint all digestive disturbances, and particularly those in which the stomach seems at fault, should always be carefully scrutinized before arriving at a decision.

Two years ago in an article on the subject of diagnosis of diseases of the upper abdomen, the writer said: "Chronic indigestion and dyspepsia, *per se*, do not exist in nearly the number of cases so diagnosed, and the causes producing the symptomatology are most often the result of gall bladder disease or ulcer of the stomach," and we now wish to add lesions of the pancreas, the vermiform appendix, and the kidney.

Much has been written concerning gall bladder disease, but there is still considerable misconception as to the symptomatology and the treatment thereof. The presence or absence of jaundice has been permitted to play entirely too great a role in the mind of the average general practitioner and even the surgeon. As a matter of fact its presence does not positively indicate gall stones, but only means that there is an obstruction to the common (rarely the hepatic) duct;

and this may be readily caused by other agencies, such as cancer, pancreatitis, pyloric thickening, perigastric adhesions, etc. It has been conclusively demonstrated that jaundice is produced by an occluding concretion in only about ten per cent. of the cases of cholelithiasis, and that the most constant and valuable signs of gall stones are digestive disorders with localized tenderness at Robson's point. These symptoms in connection with occasional attacks of so-called colic almost positively indicate the presence of calculi in the gall bladder. And even if under medical treatment perchance gall stones are passed, this does not mean that more than temporary relief of the underlying fundamental disease can be effected, as there is always an infection which can only be positively eradicated by adequate gall bladder drainage.

As to gastric ulcer and its sequelæ: This is a much more common cause of gastric disturbance than has been supposed, as has been shown by autopsies and also by operative work. Robson and Moynihan in England and the Mayos in America have had extensive experience in gastric surgery within recent years, and according to their statistics gastric ulcer or its results have been found to exist in five to ten per cent. of all individuals, though probably this percentage is too high for the South since the disease appears to be more common in northern latitudes. Be that as it may, however, the important desiderata are: early recognition, early diagnosis, and early surgical treatment, if cure is to be expected.

As relating to diagnosis: Given a patient presenting gastric disturbances with slight pain in the epigastric or over the hypochondriac region, the real import of his complaint is more often than otherwise overlooked by the clinician, the symptomatology ordinarily being considered with a lightness which should be regarded as little less than criminal! These sufferers are not accorded the thorough and painstaking physical examination they deserve; they too often make their own diagnoses of "indigestion" or "dyspepsia," with which the physician consulted usually carelessly concurs; and the patient not infrequently dictates the line of treatment with such statement as: "I know I need my stomach washed." or "I need pepsin," etc.

I am certain that general practitioners especially have been and are woefully derelict with respect to this class of patients. They drift from one doctor to another without securing the desired relief, until finally they are looked upon as nuisances or hypochondriacs, utterly unworthy of careful consideration.

Gastric analysis is not the only means of arriving at a correct opinion; in fact it may be quite misleading and should not always be accorded the greatest diagnostic weight. In my own experience careful physical examination has been more valuable in these cases than gastric analyses, and has always enabled me to make a correct diagnosis. Pain, tenderness and vomiting, especially hematemesis, are oftentimes sufficient, and these manifestations in the absence of all others, physical or chemical, must be accorded greatest consideration. Should a positive or even tentative diagnosis be made and adequate medical treatment with rest of the stomach fail to bring about relief or at least sufficient improvement to justify the hope of ultimate cure; or should we believe that the gastric ulcer is well but such sequelæ as

pyloric obstruction, peri-gastritis, hour-glass stomach, etc., be present, the patient should be promptly submitted to surgical operation.

The primary indication is drainage of the stomach, and this is best effected by simple gastro-enterostomy. No matter where in the stomach the ulcer may be located, whether it is single or multiple, and whether it is accompanied by hemorrhage or not, gastro-enterostomy usually permits of complete and permanent cure. There are possibly few other operations in the domain of surgical practice which give better results to both the surgeon and patient, which are so completely satisfactory, and at the same time attended with such slight mortality and risk as the procedure proposed for the cure of gastric ulcer. The same statement may be applied with equal force to operations upon the gall bladder, provided the patients be observed before they have lost normal resistance from long-continued illness; therefore it becomes our bounden duty to recommend surgery for relief of the ailments mentioned. Certainly if the gratifying results achieved in actual experience were as well known and appreciated by general practitioners as by modern surgeons there would be no reason for hesitation.

A few words as to disease of two other organs in which the chief symptomatology is referred most pointedly to the stomach but in which that organ is free of pathology: Acute and chronic lesions of the vermiform appendix are often diagnosticated as gastric disturbances. It has been claimed that in at least seventy per cent. of instances of undoubted primary appendicitis the diagnosis is some gastric disorder and the patient is not infrequently treated for several days on that basis. The same statement also applies to recurrent attacks of appendiceal inflammation, or the so-called chronic type of the disease, and by the time the patient reaches the operating table complications may have developed which seriously threaten life. The writer has knowledge of instances in which patients suffering from chronic appendicitis were treated medically for several months, no physical examination of the abdomen having been made, since it was believed the lesion which caused the manifestations existed in the stomach and treatment was directed solely to this organ. In these cases had careful and painstaking physical examination been made early diagnosis and prompt surgical intervention might have obviated much suffering. It must be remembered, in this connection, that appendicitis like gall stones and gastric ulcer, is distinctly a surgical disease and little benefit may be expected to accrue from medical management.

Lesions of the kidney are also mistaken for gastric disturbances and treated accordingly. The onset of acute pyelitis, for instance, many times closely simulates gastro-intestinal disease. Likewise the symptoms induced by movable and so-called floating kidney are more often than otherwise referred to the digestive tract, and in the majority of cases the primary diagnosis is indigestion or so-called dyspepsia, therefore treatment is grossly misapplied. Such errors could be easily eliminated by careful physical examination.

In conclusion we might add that if gall bladder disease, gastric ulcer, or appendicitis, be suspected though not clearly proven or differentiated, one is fully justified in advising exploratory incision and performing such operative steps as may seem advisable

at the time for cure of any lesion which may be thus exposed.

There should not only be more care exercised in reaching a diagnosis, and more operative intervention when correct diagnoses are made, but a greater number of explorations of the upper abdominal zone; and when we join hands and educate the public concerning these points, just so soon will we be able to cure our patients of complaints and ailments which embitter them by continued suffering and often make life a burden.

The Atherton.

CARBUNCLES TREATED BY THE BIER METHOD.*

BY ERWIN REISSMAN, M.D., NEWARK, N. J.

THE clinical picture of a patient afflicted with a carbuncle is so well known to every physician that it is needless to further dilate upon that subject. However the question which it is my desire to discuss is the best method to relieve this condition and at the same time cause very little or no pain to the already suffering patient.

Text books invariably teach us how to abort carbuncles by injection; how to treat them by strapping with adhesive plaster, or how to cut them; but they fail to mention that all these remedies give little if any immediate relief from pain and consequently are somewhat unsatisfactory to the patient as well as to the physician.

The attempt to abort by injection is only, in many cases, experimental at best, while poulticing seldom limits the course of the inflammation; should we, therefore, decide to operate, we confront the patient with an unpleasant experience and should the consent be obtained such an operation results in an extensive destruction of the tissues, followed by slow healing and scar formation, which looks very unsightly on conspicuous places.

It nevertheless happens that the physician is tempted in the early stages to resort to abortion by carbolic acid injection and failing in that makes other futile attempts to shorten the progress of the disease.

During all this treatment, the patient has had no relief from the severe and throbbing pain, causing him loss of sleep and other undesirable symptoms, all tending to lower his vitality and to impair his recuperative powers.

It is, then, "up to us," so to speak, to do something effective, and relief is usually sought by a radical operation.

Another, very prevalent treatment among some physicians, one which never does any good, is the application of ointments. That, however, is more and more relegated as unclean, unsatisfactory and unscientific.

The above preamble can be boiled down to the following three injunctions:

Do not abort a carbuncle by injection;

Do not poultice;

Do not cut, unless there is a very serious and extensive involvement of the adjacent tissues.

This being the result of experience, I now resort exclusively to the Bier treatment of inducing artificial hyperemia by vacuum.

* See Keen's Surgery, Vol. I., page 252.—Ed.

In the many cases of carbuncles and abscesses treated by me during the past years I have employed this method only, with excellent results.

The general plan of treatment, while, of course, modified to suit individual cases, is this: If the inflammation has attained quite considerable proportions with a good deal of induration and no opening or outlet, I make a small incision about $\frac{1}{4}$ inch under local ethyl chloride anæsthesia and then apply a cup large enough to extend a little beyond the external margin of the swelling.

This cup is left in place from ten to twenty minutes at each sitting.

On removal of the cup the surface is cleansed and a plain wet dressing is applied.

This treatment carried out for five to six days will in nearly all cases effect a cure which has been painless from the beginning and has left the patient free from discomfort all the time.

In conclusion let me say that the same treatment can be applied in many cases of acute inflammation with equally satisfactory results, provided of course the site of the inflammation lends itself to the application of the cup.

While of course the many different styles of Bier cups sold in this country are quite expensive, owing to duty and desire for large profits, this should nevertheless not be an argument against their use, as a very serviceable and satisfactory apparatus can be constructed with a glass, a piece of cotton and a match.

I know of few things in minor surgery which accomplish such good results and gain for you the gratitude of the patient.

39 Wright street.

Hyperemia in Surgical Tuberculosis.—V. Schmieden applies Bier's treatment to joint tuberculosis as follows (*Med. Rec.*, Aug. 17, '07): Inflammatory reaction in the infected parts is an effort of the system to protect itself against the bacilli, and there is benefit in increasing artificially redness, swelling and heat of the part. In Bier's method the blood is utilized by increasing hyperemia and at the same time by decreasing the flow to the joint. The hyperemia is produced by a broad rubber bandage applied evenly and proximally about the limb and not too close to the joint. The bandage must not cause pain at the point of constriction or in the joint; the extremity must remain warm and the pulse unchanged. The bandage is applied a few hours every day with intermissions. The joint must not be kept in fixation; on the other hand violent motion is not allowed. We must obtain anatomical healing with mobility of the joint. Pain and inflammatory contractions disappear, active and passive motion becomes possible, swelling subsides, large fungous masses are absorbed and fistulæ close. "Cold abscesses" are no contraindication to treatment; this is only the attempt of nature to throw off the dead tissues. The treatment is so simple that the patient may under direction apply it himself. Resection is usually unnecessary. The best results are obtained in the shoulder, elbow, wrist and small joints. The hip and knee cannot be successfully treated; nor is hyperemia applicable to exudative inflammation. Cupping glasses are used for the breast, for gland and for fistula.

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THE REMAINING PROBLEMS FOR BACTERIOLOGY.

IT is with some surprise that, after checking off a list of infections, we note the near approach to the time when our bacteriologic Alexanders will weep that there remain no worlds to conquer. By this we do not mean to imply the lack of abundant problems of importance, scientifically and economically, connected with micro-organisms. About a thousand bacteria are now listed, although comparatively few have any pathogenic importance and the great majority seem to have no bearing upon medicine. Quite a large number of lower animal organisms also produce disease or act as parasites in such a way as, equally with bacteria, to deserve whatever interest and whatever odium attaches to the somewhat indefinite word *germ*. In no respect is the classification of these minute organisms satisfactory and many authorities more than suspect that there may be morphic and chemic variations of the same germ which have led to its description under two or more names.

There is still dispute as to the specificity of many diseases and many germs claimed by investigators as causes of this or that disease, fail to conform to the four requirements long ago formulated by Koch. For instance, Graham's protozoan of dengue, Wilson and Chowning's protozoan of Rocky Mountain fever, with its tick transmissor and intermediate animal host, as well as a number of other newly-described germs, have not been satisfactorily identified except by their foster parents.

Still, accepting the cytorrhyses variolæ and treponema pallidum and a few others awaiting confirmatory evidence that cannot be gainsaid, and excepting certain rather rare diseases, mostly confined to the tropics, very few of the clinically recognized infections re-

main to be accounted for by bacteriologists. In some instances, as pertussis and mumps, there is no particular reason to suppose that the disease is a clinical, much less a bacteriologic entity. For example, any inflammatory process of the larynx and trachea, due to a variety of germs or, possibly with germs present merely accidentally, usually produces coughing, gagging and attempts at dislodgement of mucus. To seek a special micro-organism simply because a child, whose larynx is narrow and whose reflexes pronounced, whoops in a supposedly characteristic way, seems rather far fetched. Such a condition, however contagious, might well be due to influenza or to any other prevalent respiratory catarrh of germ origin. Indeed, some investigators have actually demonstrated the influenza bacillus in what they have considered typical epidemics of pertussis.

With the foregoing qualifications, the only germs apparently specific in nature which have eluded discovery are those of scarlet fever, measles, chicken pox, rōtheln. It is a curious paradox that these diseases are very prevalent, usually clinically recognizable, without doubt as to identity, indubitably contagious, and that, as a group, they must have been among the first to suggest the germ theory of disease. If we did not know the history of bacteriology, we should suppose that the germs of these diseases had been the first to be discovered, rather than those of varying clinical type, comparatively rare incidence and not so conspicuously due to a living, transmissible cause.

We have purposely cited instances to show that we do not overlook the fact that various other specific disease germs are not absolutely established; neither do we overlook the fact that various investigators have claimed to have discovered the very ones under discussion. A foreign author has made a wholesale claim to have discovered the germs of this entire group. Class has made a valiant fight for the recognition of a scarlet fever bacillus. Mallory has described a protozoan analogous to that pretty generally accepted as the cause of variola-vaccinia, and his views have found much favor. Yet we must, in an impartial review, discount the prestige of the author and his surroundings, and the fact that his opinions have been borne along by the analogy to small-pox. It is altogether likely that this protozoan will ultimately be accepted as the essential cause of scarlet fever and, on the other hand, by no means impossible that both these germs will be discredited. In the ultimate decision, not a fulfillment of the laws of Koch but of the general laws of evidence as submitted to competent judges, rendered competent by experience and special training, and rendered authoritative not by individual prowess or prestige, but by unanimity

of personal opinion, must determine the acceptance of any germ as a specific cause of disease.

There has been in the past, a tendency to explain the failure of recognition of a suspected germ, carefully sought for, on the ground of ultramicroscopic size. The present tendency is rather against this hypothesis. In the first place, there is an *a priori* improbability of the existence of an underworld of life whose cells are materially smaller than the standard set by experience as feasible for the existence of protoplasm. In the second place, the perfection of porcelain filters and of the technic of their manipulation, has shown negative results as compared with earlier experiments which apparently proved the existence of extremely minute organisms. In the third place, the demonstration of the *treponema pallidum* and various other germs long sought for, has shown that the failure to discover them was due to difficulties of staining or cultivation or other reasons not at all connected with ultramicroscopic size.

It would be a bold iconoclast who would venture the assertion that scarlet fever, measles, r  theln and chicken pox are not distinct, specific diseases. Yet we must remember that their separation rests on purely clinical evidence, that occasional cases occur in which the differential diagnosis of the first and second, of the second and third, possibly of the first and third, is in doubt; similarly that it is sometimes extremely difficult to differentiate small pox and chicken pox. Without in any sense committing ourselves to an opinion, it ought to be realized that the diagnosis of a disease by symptoms, even by periods of incubation and its various stages, is not strictly a diagnosis at all but merely carrying out an implicit agreement to call by this or that name, a corresponding group of symptoms. The medical profession has in the past had greater surprises than that of revising the list of children's diseases. While the mass of evidence is against such a hypothesis, it is conceivable that the three erythematous diseases are variants of the same infection, which is not so strictly semelincident as has been supposed and that, analogously, chicken pox is a mitigated variola. A more plausible hypothesis, however, is that we have to deal with two related groups of diseases, caused by biologically related but specifically distinct germs.

At any rate, it may well be asked whether a systematic investigation along these lines would not be more practical in its results than that of cancer—which latter we by no means disparage—since various analogies suggest that better results from the humanitarian and economic standpoints can be secured in the case of well nigh universal infections, mainly attacking children, than in the case of a disease which involves, after all, only about three per cent. of the community, which occurs usually rather late in life,

which is very probably strictly degenerative rather than parasitic and whose curability or prevention does not seem to be so closely linked to its etiology as that of the exanthemata.

We should like to see one of the great research laboratories concentrating, if not actually limiting, its energies to this problem. We would further suggest that a very careful and thorough search should be made, not only for the germ in a direct way, but for lower animals which harbor the germ as actual hosts, not as adventitious carriers. This indirect search would be of value not only in an indirect tracing of the germ, but, very possibly, in pointing out means of prophylaxis and cure.

For example, the modern researches on syphilis, whose importance it would be difficult to overestimate, would have been aborted by adhering to the time-honored idea that syphilis was exclusively a human disease. It is perfectly conceivable that the mere thickness of the hair on the lower animals may be hiding a characteristic and frequent, though doubtless mild manifestation of the disease in question. It is still less improbable that, corresponding to scarlet fever, measles, etc., there may be mitigated and clinically distinct but essentially identical infections analogous to vaccinia and grease. We do not by any means commit ourselves to the prophecy that such a relationship will be discovered but, with 20,000 human beings dying annually in the United States from scarlet fever and measles, it is worth while in a purely financial sense, to devote the resources of any one of our laboratories to this research for five years, even if the chances of success be estimated as one in a thousand.

This statement gains added force when we realize that there is no prophylactic against infection which is so efficient, simple and cheap as vaccination against small pox. In spite of several years of experiment we have only one serum against infection which has proved unmistakably efficient and applicable to human beings—that against diphtheria. Comparing this with vaccination, it is immeasurably inferior, as a prophylactic, and probably not superior as a means of therapeutics. At any rate, the aggregate life-saving value of vaccine is far greater than that of diphtheria antitoxin.

It must also be borne in mind, with due credit to Wright for his typhoid inoculation and with due regard to the possibilities of analogous results in other infections with analogous products, that there can be no vaccination in any such sense as applies to small pox, for any bacterial disease, nor for any that is not pretty definitely semelincident. A true vaccination, in this sense, depends upon two factors: a disease, one attack of which, even in a mild or mitigated form, confers a practical though not necessarily absolute im-

munity against another attack, and a germ which passes through life-cycles of different kinds.

On the one hand, there is the probability, amounting in most instances to actual demonstration, that a true vaccination cannot be found against any human infection other than those included in the exanthematous group. This, of course, does not mean that serums or even dead or weakened cultures may not be used in a satisfactory way, after the perfection of our theories and technic. On the other hand, there is great *a priori* probability that the germs of the remainder of the group of exanthemata are analogous in their life cycles to that of variola-vaccinia. Indeed, as had been stated, Mallory and his co-workers have afforded considerable ground for believing that such a germ actually exists for scarlet fever.

PSYCHO-THERAPY BY THE CHURCH.

THE rector of a prominent church in an eastern city, recognizing the hold which Christian Science, The New Thought (so-called) and various other quasi religious, quasi philosophic cults are obtaining, has organized a movement toward "scientific Christian living, and the psychic treatment of functional troubles." As explained by one of the reverend doctors interested, this Movement differs from Christian Science in the explicit recognition of a material universe, of the reality of organic disease, in the entire absence of revenue from the exercise of the psychic influence, and in the fact that no "patient" is accepted except after the determination of the functional nature of his trouble by a physician.

The Movement distinctly recognizes the necessity of working through the subconscious personality of the afflicted individual, by three means, suggestion from without, auto-suggestion and, in certain instances, hypnotic suggestion. It also recognizes two important branches of troubles to be treated: those manifesting themselves more or less frankly as bodily suffering, including various nervous states, and those of distinctly moral nature. Not only the clergy but prominent laymen and a number of physicians are quoted as supporters of the Movement.

At first thought, this frank recognition that the Church has somehow failed to supply a want which large numbers of persons seem to find fulfilled in Christian Science, this systematic endeavor to make religion practical by ministering to the mental and nervous weakness of its devotees, this upholding of the hands of the medical profession in the difficult and delicate task of healing disease which makes its possessor and his—or her—immediate associates wretched for a lifetime and yet has no real basis, seems to merit our heartiest endorsement.

But, on more mature consideration, certain doubts present themselves as to the advisability of making religion practical to just this degree. The movement is said to rest largely upon psychology and to be widely supported by psychologists. Its exponents emphasize the necessity of recognizing not only the conscious but the subconscious self of the individual and the frequent futility of argument with the former when a deep impression upon the latter may bear good results.

At the outset, we rather question whether psychology is a satisfactory basis for practical therapeutics. Our personal, formal studies in psychology were made some time ago and were somewhat rudimentary, yet they were made long after the older metaphysics was discarded. We also admit that psychologists have pursued and have included in their curricula for students, much didactic and experimental work in the physiology of the nervous system. Thus, while regarding psychology as a valuable mental discipline and as radically different from the purely speculative metaphysical mental gymnastics of an earlier period, we feel that, except as it has included certain material physiologic observations, it is rather too subtle to be employed as a basis of a system of therapeutics.

We also feel that while, as a matter of convenience, we may speak of the duality of the conscious and the subconscious self, such a conception is essentially false. There is only one "self"—whatever that means—and anyone not well informed in physiology who uses the term sub-conscious self, is bound to confuse with the conception of the ego, a mass of purely mechanical and chemical phenomena which have nothing more to do with the ego than the secretion of urine or of hydrochloric acid.

Probably no one would object to the general dictum that clerical and lay church workers should encourage strength of mind and body, help weak brethren and sisters to maintain self control, to avoid hysteric attacks, to drop suicidal ideas, and, in general, to stop making the lives of their friends and relatives miserable by brooding over imaginary ailments, giving way to peevishness and centering their thoughts on their own mental and physical state. But, when it comes to a definite inclusion among the functions of the Church, of the treatment of medically diagnosed functional disturbances, a formal ecclesiastical adoption of psychology in a crusade against hysteria and neurasthenia, and the practice, even if occasional, of hypnotism, we should say—subject to change of sentiment by logical argument—that the Church was going too far.

It may be mere prejudice founded on professional jealousy, to hold that a learned, tactful clergyman, relying on the diagnosis of conscientious and skillful neurologists, might not wisely practise the various forms

of suggestion mentioned. But, at any rate, such a precedent followed by a clergyman not at all conversant with psychology and physiology, not duly impressed with the necessity of sharply discriminating between moral suasion and medical supervision of a case or guided by the diagnosis of a physician not particularly skillful, might prove highly disastrous.

In our medical experience we have been forced to recognize that many conditions diagnosed as functional, neurotic, hysteric, etc., have depended upon intestinal toxins, or perversions of hepatic, thyroid or other metabolic functions or even upon such purely mechanic nerve insults as result from movable kidney. It is notorious that certain forms of meningitis, the early stages of brain tumor, spinal cord degeneration, etc., often lead to the diagnosis of hysteria or are subsequently found to explain acts at first considered purely immoral or criminal.

It occurs to us that a patient might better be under the observation of a physician for a psychic trouble than be relegated to Church workers for any definite "psychic treatment," so long as formal treatment seems to be necessary at all. If the trouble is not merely psychic, the chances are that the physician in charge, or one of his successors, will ultimately recognize the true nature and adopt the appropriate treatment.

We cannot but utter the warning that the "psychic treatment," under Church auspices, of bad temper, imaginary invalidism, tendencies toward immoral acts—using the word immoral in its broad meaning—contemplation of suicide, etc., even if the case is primarily declared by a physician in good standing to be non-organic, functional, neurotic, etc., is bound to result in some very tragic occurrences. For instance, a neglected Bright's disease, hepatic sclerosis, atypic Graves's disease, general paresis, will be discovered or a moral perversion will culminate in murder, suicide, or some shocking sexual crime, which might have been averted by restraint in an insane asylum.

But the gist of the matter is this: the duty of the Church is a frank appeal to the conscious self, not according to any recondite psychologic analysis, but along lines of common morality and common sense. If the individual is a whining, selfish, hysteric invalid without cause, or is wickedly contemplating suicide without the excuse of actual disease of the brain, or is otherwise affording some manifestation of cussedness, what is wanted is a kindly meant but vigorously applied ecclesiastical rod to the buttocks of the mentality, not hypnotism or cajoling of the putative subconscious ego. Naturally Christian Science or any other form of religious charlatanism, appeals to a considerable number of luxury-loving, pampered, self-centered individuals. The old-fashioned, clear-cut distinction of right and

wrong, the teaching of individual responsibility and duty to God and one's fellows, the conception of the Church as directly concerned with moral and religious matters and not primarily with the ease and comfort of temporal life, naturally creates a sense of something lacking so far as persons of this calibre are concerned. Precisely the same sense of something lacking in the domestic discipline, is felt by the child who is punished for stealing jam and who has cold water poured down its throat when it kicks the floor and screams in a tantrum. The child has a yearning for some scheme of parental solicitude which will make it good and quiet without these disagreeable concomitants of disregard for the rights of others and of lack of personal self-control. In exactly the same way, certain adults want a religion which will keep them good and healthy and free from "nervousness" and from the results of direct infractions of the laws of hygiene, without disagreeable theologic statements or troublesome medical attendance.

Decorative Physicians.—It happened that a physician, meeting a girl who complained of pain in the side, urged her to consult the family physician. The latter looked at her—literally—prescribed a liniment and a tonic and assured her that there was nothing serious the matter. As a result, the patient walked around for two or three days, taking from hygienic motives, as much exercise as possible, for the last day, at least, with a couple of quarts of liquid in one pleural cavity. So much dyspnoea finally developed that it became necessary to summon some physician. The family naturally felt that their regular attendant had had his chance and the question of further choice came up. The patient expressed a preference for an old friend of the family, a man of excellent standing, wide experience and large practice. The mother objected: "No, daughter; Dr. — is decorative, but what you want is some one to get you well." This is the meanest adjective that we have ever heard applied to our profession. Unfortunately, so far as we can judge, and we do so as impartially as possible, and even with personal regard in the man's favor—it was correctly applied. It behooves each of us to hold a clinic on himself and determine if this diagnosis hits our own case.

Constant Study.—The other day we met a musical friend with his instrument and inquired if he was going to give a lesson. "No," was the reply, "I am going to take one." For a moment we felt surprised, in consideration of his well known ability and standing. Then we recollected a number of other good musicians themselves teachers, who either were absent from the city studying with some greater master or had recently been engaged in this way. On inquiring who this particular teacher was, it proved to be some one whom we personally knew to be planning for a particularly thorough and expensive course of study abroad.

Musicians are by no means the only professional workers besides ourselves who recognize frankly the necessity, not only of study, but of study under the guidance of another, even after they have acquired

considerable proficiency. Perhaps even better than ourselves they recognize that they do not lose cast by taking lessons of some one not much more proficient than themselves and not necessarily connected with an institution or residing in a large center of population, or abroad.

An Easy Profession.—The time was when almost any profession—excepting our own—might be pretty successfully followed without the expenditure of great effort. Indeed, the life of a medical man was not hard from the strictly professional standpoint, but on account of uncertainty of hours of work, exposure to the elements and to actual risk from infection. All these extrinsic factors have been greatly mitigated, partly by the general progress of civilization in securing material comforts, partly by sanitary measures. There are now many medical men, in active practice and even doing work which is not considered as a specialty, whose night work is a negligible factor, who can make social and other engagements with the full expectation of keeping them, who are almost never exposed to the inclemencies of the weather and who rarely see an actively contagious case. Yet they are hard workers because, as the extrinsic factors of discomfort attending medical practice, have decreased, standards of attainment, as judged both by their colleagues and by the laity, even by popular opinion as crystallized in the enforcement of legislation, have vastly increased.

When professional life was restricted to a few especially well educated men, teaching, the ministry, etc., were comparatively easy. Now the average teacher can no more think of locking his school after the pupils are dismissed than the employee of a bank can consider himself a gentleman of leisure after three o'clock. The clergyman, also, in addition to pastoral duties and work of a direct philanthropic nature, has a far more critical congregation than formerly and one, for the most part, which represents hard work and expects the same of the man whom it pays. It may require less dogma than formerly, it may be less insistent on its own particular brand of orthodoxy, but it expects its minister to be a scholar and to take an active, intelligent interest in a broad range of social and educational activities.

To an outsider, it appears that law, more than any other profession, has adhered to the easy-going standards of the past. A day's labor which begins at ten and is over at four or five, a ready postponement of engagements for out-of-town trips, a frank policy of seeking accurate information only as it is to be applied to a particular case, does not coincide with our own notions of professional life. The paucity of legal literature, especially of a periodic nature, as compared with the exuberance of our own and the very occasional and largely social nature of lawyers' meetings as compared with our own elaborate and tense society meetings also affords a marked contrast.

We recollect an instance in which a lawyer and several physicians belonged to the same real-estate syndicate. The question came up as to the best means of arranging the technicalities of joint ownership. The lawyer calmly declared his ignorance of the whole subject but promised to look it up. This was in a city where real-estate speculation had been active for many years. "Great Scott!" said one of the phys-

icians, "suppose I had said I would look up the treatment of grippe" (of which there was then an epidemic, though not of such relative numbers as real-estate transfers). "No wonder you lawyers get fat." In another instance, a physician during a consultation with his legal adviser regarding the disposition of some property preparatory to a change of residence learned casually that the lawyer, though a man of good reputation, was entirely unaware of the existence of medical licensure laws but imagined that, after securing a diploma from any medical school, a physician could practice anywhere in the world. And this in 1907!

We call attention to this state of affairs, not to throw obloquy on the legal profession or to suggest that its business ought to be conducted on our own precedents but to point out that a young man who is by nature a student, but who has no special predilection for chemistry and biologic science and who finds esthetic objections to many details of medical practice, has an especially good opportunity in law at the present day in spite of the fact that that profession is almost as overcrowded as our own. Such a man, devoting the same time to the reports of the work of his associates that many physicians do to medical literature, entirely aside from practice or original research in various laboratories, joining with a few of his colleagues to form an active society for study and mutual criticism and assistance, comparable to a weekly, local medical society, accumulating notes of legal decisions, as we accumulate notes for the bibliography of medical articles, and endeavoring to maintain somewhat the state of preparedness for remote legal possibilities that we are supposed to maintain for a wide variety of diseases, has a competitive possibility analogous to what a modern, progressive, hard-working physician would have if he could be dropped fifty years into the past. In one respect, he has a decided advantage for he would meet a clientele not at all prejudiced at his innovation.

Non-Medical Quacks.—"Proficiency without Practice" is the heading of a musician's advertisement. "Muscle without Exercise," is the almost identical one of a "professor" of physical culture. "I can't understand just why the better class of real estate men are down on Mr. —. His methods seem all right so far as I can judge, but I don't want to deal with a man who has not the respect of the members of his own profession any more than I want to employ a quack doctor." These were the words of a small business man and we might quote almost identical language from a similar source, regarding insurance.

We physicians often speak as if quackery were limited to our own profession and as if it were something whose evils were appreciated only by ourselves. On the contrary, every profession and business has its standards of competence and of legitimate methods and while, for various reasons, these cannot usually be so plainly codified as in our own case, they are pretty well recognized both within and without the membership of the particular profession or business. Because medical quackery is so sharply contrasted with legitimate professional standards it is commonly taken as the type and the laity, with surprising unanimity, compare irregular and off-color members of all sorts of vocations, with medical quacks.

This fact is significant. When a matter passes into the common stock of comparisons, it is well appreciated, even if not thoroughly understood. Undoubtedly the average layman thinks that the medical profession is a little narrow in its professional customs and he likes to joke us about our etiquette or to chide us seriously when it seems to him to conflict with his convenience and welfare—as, undeniably, it sometimes does. But the idea that we often express that the laity are in sympathy with quackery and give it their support is hardly justified. Throughout the country at large, there is scarcely one quack to ten physicians in regular practice. With all the specious advantages of advertising, it is only occasionally that a quack attains great financial success. To a large degree the clientele of quacks is composed of two classes of patients: those who have sought relief from their regular attendants in vain, either because of the incompetence of the latter or the essential incurability of the disease, and those who are simple-minded and ignorant.

Every physician knows of instances in which he has himself, through some oversight or lack of tact, failed to afford the needed relief. The practice of specialists is largely made up of cases in which one or even many previous attendants have failed to ascertain a condition well known to medical science in general and amenable to properly applied remedies, and in which no effort has been made to direct the patient to a proper source of treatment. It is inevitable that many such cases should pass into the hands of quacks and we might as well admit among ourselves that occasionally a man may be extremely unethical and at the same time perfectly competent. Drowning men clutch at straws and patients whose cases have been pronounced hopeless by regular physicians naturally seek those who promise recklessly to cure everyone. It is by no means infrequent to find physicians themselves doing this very thing when attacked by cancer, diabetes or other essentially fatal disease, and the experimental use of all sorts of illogical remedies, often of illegitimate origin, in the treatment of cases for which approved medical measures offer no ray of hope, is common and even justifiable.

One of the worst and at the same time one of the most illuminating forms of non-medical quackery, is religious charlatanism. We have often regarded with wonder and even admiration, the charity with which decent clergymen treat the blatant, eccentric, vulgar seekers after notoriety who use their calling to satisfy the lowest form of vanity. In His human aspect, the Origin of the religion which dominates civilized countries, though of humble birth, was of royal descent and, though pre-eminently the friend and associate of the common people. He was never vulgar but the highest type of a gentleman. Thus, we confess to a particularly deep prejudice against the quack clergyman, but it must not be forgotten that they seek their level in the yellow press and in the support of ignorant and "mucker" congregations. More than any other type of unprofessional and undignified craftsmen, do they serve to emphasize that, in any vocation, high ideals and even practical service and utility cannot be divorced from conformity with customs which long experience has shown to be best adapted to harmonious and efficient solidarity of a profession.

BIBLIOGRAPHICAL

A Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Eighth edition, revised. 12mo. of 558 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Flexible leather, \$2.50 net.

This little book always kept fully abreast the times, affords a concise but clear and accurate representation of the essential facts of the Practice of Medicine, and it has demonstrated its right to existence by its speedy editions, of which this is the eighth.

For the student and as a handbook there is none better.

Principles and Practice of Modern Otolaryngology. By John F. Barnhill, M.D., Professor of Otolaryngology and Rhinology, Indiana University School of Medicine, and Ernest de Wolfe Wales, B.S., M.D., Associate Professor of Otolaryngology, and Rhinology, Indiana University School of Medicine. With 305 original illustrations, many in colors. Philadelphia and London: W. B. Saunders Co. 1907. Pp. 575, octavo; \$5.50.

This is a new book, intended for the student and the general practitioner, and is thoroughly modern in its treatment of the subject.

The methods of practice in this specialty have changed so rapidly of late, that it is better to wipe off the slate and begin over again. This is practically what these authors have done.

Certain traditional beliefs are corrected, the earliest possible prophylaxis or treatment is advocated, and the importance of a thorough examination and a definite diagnosis as a basis for rational treatment is emphasized.

The text is thoroughly and superbly illustrated. The work is heartily commended to all who are interested in ear work.

The publisher is to be congratulated for producing a masterpiece in book making.

The Operating Room and the Patient. By Russell S. Fowler, M. D., Professor of Surgery, Brooklyn Postgraduate Medical School, Brooklyn, New York. Second edition, enlarged. Octavo volume of 284 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$2.00 net.

The present edition of this book is much enlarged by the addition of "General Considerations in the After-treatment," which cannot fail to be of great interest and usefulness.

Hospital internes will especially appreciate the work, and general surgeons will not find it amiss as a reminder.

Diseases of Children for Nurses, including infant feeding, therapeutic measures employed in childhood treatment for emergencies, prophylaxis, hygiene and nursing. By Robert S. McCombs, M.D., Instructor of Nurses at the Children's Hospital, Philadelphia, etc.; illustrated. Philadelphia and London: W. B. Saunders & Company, 1907. Octavo, pp. 431. \$2.00.

This is another excellent book for nurses, so that now the subjects are well covered.

The author has given a short description of diseases, sufficiently clear to enable a nurse to know

what symptoms to expect and what complications to guard against, together with anatomy and pathology to match for the purpose.

Treatment has been included only where a thorough knowledge of its underlying reason is necessary for intelligent application and in emergencies.

Prophylaxis, infant feeding and the methods of nursing are emphasized as they should be.

The illustrations are excellent. The book should be added to the library of every nurse.

A Reference Hand-Book of Obstetric Nursing. By W. Reynolds Wilson, M.D., Visiting Physician to the Philadelphia Lying-in Charity, etc. Illustrated; 12mo.; pp. 258. Price, \$1.75. Philadelphia and London: W. B. Saunders Company, 1907.

The author aims to present the details of his subject in simple form, so that they may be fixed permanently in the reader's mind, and he confines his text to the practical points. As Obstetrics has become a distinct branch in nursing, such a book was urgently needed and we have no hesitation in commending it to every nurse who engages in this kind of work.

Hospital Training-School Methods and the Head Nurse. By Charlotte A. Aikens. Late Director of Sibley Memorial Hospital, Washington, D. C., etc. Philadelphia and London: W. B. Saunders Company, 1907. 12mo.; pp. 260. Price, \$1.50.

This hand-book is an attempt to discuss some phases of the training school problem; to suggest to workers in that field, plans that have been tested to give definite help to those who are beginning the work of teaching and supervising in hospitals.

The book is excellent for its purpose, and we have no hesitation in commending it to those for whom it is intended.

The Treatment of Fractures: With Notes Upon a Few Common Dislocations. By Chas. L. Scudder, M.D., Surgeon to the Massachusetts General Hospital. Sixth edition, revised and enlarged. Octavo volume of 635 pages, with 854 original illustrations. Philadelphia and London: W. B. Saunders Company, 1907. Polished buckram, \$5.50 net; half morocco, \$7.00 net.

This most practical work presents in concise and illustrated form, efficient methods of treating the common fractures of bone. Its usefulness has been shown in the manner in which editions have followed each other.

In the present edition, the wisdom of operating upon certain fractures is considered at considerable length. A few operative procedures have been described. New illustrations and new X-rays have been added, and remote results following trauma to the head are considered.

Especial attention has been directed to obstetrical skull fractures of the new-born, to fractures of the zygoma, of the malar bone, of the superior maxilla, of the head and neck of the radius, of the neck of the femur, and of the carpal scaphoid; to unreduced dislocations of the elbow, to acromio clavicular dislocations, to pathological fractures, to old fractures of the radius, and to Volkmann's contracture.

The author lays great emphasis upon the neces-

sity for repeated and frequent inspection of a fracture, after it has apparently been reduced. It is splendidly illustrated. Every practitioner should have a copy.

Diseases of the Nervous System. Edited by Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence, Northwestern University Medical Department, Chicago, Ill. An authorized translation from "Die Deutsche Klinik" under the general editorial supervision of Julius L. Salinger, M.D. With one hundred and ninety-five illustrations in the text and five colored plates. New York and London: D. Appleton & Company, 1908. Octavo; pp. 1205. Price, \$7.00.

This is the fourth volume in Appleton's Modern Clinical Medicine series, the three previous ones, on other subjects, having met with most favorable consideration. The work as a whole has been denominated the masterpiece of the twentieth century, in advance of the times, and the best series of clinical monographs in German, extant. It is certainly well adapted to the needs of the general practitioner.

The book under review takes up the diseases of the nervous system, with a completeness that can be found in no other single volume work.

The contributors are men of the highest standing in their special lines.

Ask the publishers to send you a prospectus showing in more detail what the work really is.

A Text-Book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M.D., Emeritus Professor of Gynecology in Starling-Ohio Medical College, and Sometime Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus, Ohio. Second revised edition. Illustrated with 350 engravings, a colored frontispiece, and 13 full-page, half-tone plates. 642 royal octavo pages. Extra cloth, \$4.50, net; half-morocco, gilt-top, \$6.00, net. Philadelphia: F. A. Davis Company, 1907.

The changes in the present edition of this practical text-book are confined chiefly to technics, conspicuous among the innovations being the operation of Goffe for extensive cystocele, and that of Watkins for post-climateric prolapse of the uterus.

A number of new half-tone plates have been added to the illustrations, besides some cuts which have been substituted for others less desirable. A regional index of symptoms has been appended as an aid to the student and the busy practitioner. The text is excellently stated, and well illustrated.

The book is commended to the student and to the practitioner.

Progressive Medicine. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, assisted by H. R. M. Landis, M.D. Vol. ix., No. 4. Lea Brothers & Company, Philadelphia and New York. Six dollars per annum.

The December issue of this up-to-date publication contains articles on diseases of the digestive tract and

allied organs, the liver and pancreas, diseases of the kidneys, surgery of the extremities, fractures, dislocations, tumors, surgery of the joints, shock, anæsthesia and infections, genito-urinary diseases and practical therapeutic referendums. Now is the time to subscribe.

A System of Medicine by Many Writers. Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A. Regis Professor of Physic in the University of Cambridge, Fellow of Gonville and Gains College, and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital and to the Victoria Hospital for Children, Sometime Fellow of St. John's College, Cambridge. Volume III. London: Macmillan & Co., Ltd., 1907. Octavo; pp. 1040 Price, \$5.00.

We have before us the third volume of this classical work practically re-written.

Dr. Garrod's articles on joint affections are entirely new, and in some respects open fresh ground. A new article on Pulmonary Osteo-Arthropathy has been provided by Dr. Batty Shaw; and Dr. Poynton, who now collaborates with Dr. Cheadle in the article on Rickets, has contributed a separate account of Achondroplasia. The articles on Gout and Diabetes Insipidus have been revised.

Among the diseases of the alimentary canal the article on diseases of the mouth has been entirely re-written by Mr. Walter Spencer; a new article on Congenital Hypertrophy of the Pylorus has been contributed by Prof. Still; and three important articles on Appendicitis, Intestinal Obstruction and Visceroperitonitis, formerly contributed by Sir F. Treves, have been re-written by Mr. Lockwood, Mr. Barnard and Dr. A. Keith respectively. A fresh section on the difficult subject of the Bacteriology of Diarrhoea has been written by Dr. Slater; and the Differential Diagnosis of Diseases of the Anus and Rectum, originally contributed by the late Mr. Herbert Allingham, has been revised by Mr. Mummery, who has introduced a colored plate showing various morbid appearances as displayed by the sigmoidoscope. Considerable additions have been made to the article on Gastric Ulcer by the late Prof. Dreschfeld.

The section on Diseases of the Peritoneum is prefaced by an account of shock by Dr. T. G. Brodie. A clear description of the general pathology and bacteriology of Acute Peritonitis and a new article on Subphrenic and other forms of Peritoneal Abscess are given.

Each article, of which there are many, has been treated by a master hand.

The text is illustrated by twenty-six figures and one plate.

The Operations of Surgery intended especially for the use of those recently appointed on a hospital staff and for those preparing for the higher examinations. By W. H. A. Jacobson, M.Ch., Oxon., F.R.C.S., Consulting Surgeon Guy's Hospital, and R. P. Rowlands, M.S., Lond., F.R.C.S., Assistant Surgeon and Surgeon to the Orthopaedic Department, Guy's Hospital; Joint Teacher of Operative Surgery in the Medical School. Fifth edition, with seven hundred and seventy-seven illustrations. In two volumes. Philadelphia: P. Blakiston's Son &

Co. 1908. Octavo; Vol. I., pp. 926; Vol. II., pp. 1,139. \$12.

This work is aimed at being more comprehensive in scope and fuller in detail than others of its class, with a view to making it more serviceable to those connected with hospitals, to those who are working for higher examinations, and to the general practitioner.

The plan adopted is according to Regions, the author desiring that those for whom it is intended should study the anatomy of each region at the same time as the account of the operations.

The text is classically written by most competent and experienced hands, and well illustrated.

Those in want of a practical work on surgery should examine this.

The Reduction of Cancer. By the Hon. Rollo Russell. Longmans, Green & Co, London & New York, 1907. 12mo.; pp. 62.

The author of this interesting little book attempts to prove by statistics that the reduction of cancer depends upon the restriction of diet to *plain living*, avoiding flesh and stimulants of all kinds. He would confine the diet chiefly to vegetable products and fruit.

He shows the cancer rate of coffee drinkers to be the highest of all and tea drinkers next. The Japanese are moderate eaters; their diet is mainly vegetable, but they are described as perpetually drinking tea, and 20,000 die of cancer every year.

A diet of animal flesh by itself, without other stimulants, does not appear to cause much cancer.

The book is worth reading.

Blakiston's Quiz Compend. Compend of Surgery for students and physicians, including Minor Surgery and a complete section on Bandaging. By Orville Horwitz, B.S., M.D., Professor of Genito-Urinary Surgery, Jefferson Medical College; Surgeon to St. Agnes Hospital, Philadelphia, etc. Sixth edition; revised and enlarged. One hundred and ninety-five illustrations and one hundred and four formulæ. Philadelphia: P. Blakiston's Son & Co., 1907. 12mo.; pp. 334. Price \$1.

The size of the present edition of this book—almost three times that of the first—shows the great advance in surgical knowledge. The price still remains at the original figure, one dollar.

These compends, as is well known, are based upon the most reliable text books and contain information nowhere else to be found in such a condensed practical shape.

A Manual for Boards of Health and Health Officers. By Lewis Balch, M.D., Ph.D., Secretary State Board of Health of New York, etc. etc. Banks & Company, Albany, N. Y. 12mo.; pp. 242.

This is a short, compact guide for the use of health officers, and is a simple practical statement of the duties of these officials, which will be found of great service. It is the result of extensive practical experience on the part of the author.

Dr. John H. Clarke, of London, has sent us a copy of his superb biographical sketch of his friend, the late Dr. Thomas Skinner. The little book will be a delight to those who knew this most lovable man.

The fumes of burnt sugar are antiseptic and deodorant, as Frillat of the Pasteur Institute has found that they contain formaldehyde.

CORRESPONDENCE

ANIMALS TREAT THEMSELVES.

To the Editor of the MEDICAL TIMES:

In connection with your abstract from the *Providence Journal*, page 304, October number, caption, "Animals Treat Themselves," the following may be of interest: One hot day during the summer of 1906 an electric car running at full speed struck a small, black female cat of mine, removing her left hind leg near the hip joint. Now, we all know what would have taken place had one of our patients been thus treated. There would have been a council of surgeons, anaesthesia, picking up of vessels, cutting away of dead tissue, preparation of flaps, etc., etc; all under full antiseptics, of course, and mayhap a death certificate as the ultimatum. Not so with my feline. She crawled away and hid herself under a bush somehow. She was half covered with grass, leaves and earth when I found her, twenty-four hours afterwards. She licked the wound almost continuously, but refused any food or attention whatever. Apparently she had decided to keep cool and abstemious and to lick that wound religiously. Now, if our patient, after many anxious days and nights on the part of all concerned, had been able to resume business after three months, there would have been congratulations all around; probably well merited. But my cat, after lying still for a few days, managed to crawl up a step or two of a high porch and to drink a little milk. I noticed, however, that above all things, she sought the shade. In less than two weeks she hobbled around on the advent in my yard of a butcher's cart. The next spring she gave birth to a litter of kittens, and as I write the three-legged cat purrs contentedly under the stove a few feet away. I call that good surgery. I may add that on several occasions the cat became very offensive on account of pus forming in the wound. Under these circumstances she would absent herself—not always, it is true, reluctantly—for a short time, returning in a clean, aseptic condition. I have seen nothing in modern surgery surpassing this "category," either in results or in the time taken to accomplish them. But then they say "a cat has nine lives." STANLEY M. WARD, M.D.

Hampton, N. H., December, 1907.

THE AUTOMOBILE FOR THE DOCTOR.

To the Editor of the MEDICAL TIMES:

The practise of medicine has two very serious disadvantages not found in other professions. One is the loss of time inseparable from seeing patients. The other is the inability to delegate the work to others.

The merchant, as he grows older and more successful can delegate his work more and more to assistants. His mind can dominate his business and control broad general policies, but the actual work can be done by some one else. Men like Carnegie or Wanamaker train younger men so successfully that they can carry on work as well and as successfully as their principals. Thus when Wanamaker was Postmaster General under Harrison, he spent four years in Washington, and yet his business ran on the same and no one saw the slightest difference. This faculty is necessary for real success in the mercantile work. If a business depends on one man's life or energy, it is in a precarious condition. It must be able to withstand the loss of any man, or it is not really flourishing.

So it is with many of the professions, such as the

law and the ministry. The successful lawyer develops a staff of assistants who can carry out the routine work and leave the larger things to the chief. Thus a well-trained lawyer can take a case to trial and never really go thoroughly over the case until the time of trial. Then his assistants bring the evidence, the data and the legal references to him, and he produces an impression on the judge and jury that everything had been done personally. His trained mind seizes strong points, shades doubtful situations and throws his case into the best possible position. So can the active metropolitan minister do his work with the aid of good assistants. Many well-known architects never draw a line, outlining their ideas and plans to clever draughtsmen in their office.

The medical profession does not exhibit this advantage, however. As a doctor grows older, his own services grow more in demand. The patients want him personally—not his assistant. The average successful doctor does send his assistant, but it is as a rule to the less desirable patients, for he realizes that as a rule the action will generally result in alienation of the patients so treated.

The late Doctor Pepper, realizing this disadvantage, and the further one of going to see patients, wasting in a sense much time, did everything to overcome it. For example, he took people on his rounds for various reasons. Thus, when it came examination time, he examined many students on his rounds to see patients. The writer, for one, went with Dr. Pepper and sat outside while he saw patients, and was examined in this way. It was on this trip that Dr. Pepper said: "Remember, you will never be a successful doctor unless you run upstairs. Produce a sense of haste, even if you stay all day later; that is the effect you want."

Again, the writer well remembers a visit paid to the late Dr. Hiram Corson, of Plymouth Meeting. This remarkable old gentleman had been in practice over sixty years in the hills north of Philadelphia and was spryer in body and more alert in mind at that time than many men half his age. I was preparing at that time a life history of the late Dr. D. Hayes Agnew, and I was invited to spend the day by Dr. Corson to talk over the life of the University of Pennsylvania in the early part of the last century. When we started, to my dismay, Dr. Corson threw the reins to the bottom of his buggy and allowed his horse to run freely down one of the steepest and roughest hills I had ever seen. He noticed my alarm with some expression of enjoyment, and said, "Don't be afraid, doctor, I have been doing that on this hill for sixty years." He said, "I found early in my professional life that I must spend a large part of my time in my buggy, and so I have always educated my horses to be sure-footed, and I always read or even write going down such hills as these. In this way I feel that I have added many years to my life, doing things which I would otherwise be compelled to do in my office or steal from the hours of the night."

These two physicians were doing something to overcome the handicap of long trips to see patients. Consequently, the automobile has been recognized ever since its inception as a great factor in the physician's life. As yet this machine has not been as practical as its friends and admirers could wish; for every automobile has yet a more or less complicated machine which is rather difficult to keep in order and whose repairs are relatively expensive. It was thought at first

that electricity would solve the problem of the agent for propulsion, but as yet electricity has been more or less of a failure. It will serve for the use of automobiles that fly around level city streets; but it will not do for extended trips, thus to the physician whose practice is limited to a level area its use is more or less practical; but to the average doctor who must take high hills and long roads, it is useless. Within the past week Edison has announced that during the winter he will place on the market a new battery which will supersede everything else as a motor power. Whether this is a newspaper yarn, I do not know, but its consummation is devoutly to be wished.

In the meantime we must struggle along with the material we have at hand, and in discussing this problem I will give my own practical experience, and not give any theoretical suggestions. It is my belief that the physician or other purchaser is at first apt to fall into the mistake of considering an automobile an automobile. There is as much difference in automobiles as there is in people. One automobile may differ as much from another as the savage Hottentot from an Agassiz or a Darwin. Therefore, the novice in the field is apt to buy too cheap a machine, and in his zeal is especially apt to pick up a second-hand machine that in the deft hands of the repairer looks externally as well as a much higher-priced machine.

There has been such a rapid improvement in the mechanism of the automobile that the machine of 1902 is woefully inferior to the machine of 1907, and therefore the man who buys such a machine is making as much a mistake as if he bought a camera 25 or 30 years old. There was a time in photography, from about 1880 to 1898, when you could scarcely buy a camera that was not superseded by something better and cheaper; for it is a curious fact that nearly all improvements included a reduction in price. But in the last ten years there has been no marvelous improvements in the photographic camera, so that it looks as if things were about stationary in that line, unless some new principle in photography is discovered, such as color photography. But the automobile, up to the present time, has been in the stage of evolution—manufacturers have been making experiments, new models have been used, and various combinations tried and frequently found wanting.

In making a comparison of the second-hand machines it will be found that the cheapest machine that can be purchased is a runabout of the period of 1902 to 1905. This was a very effective machine and so powerful that it won the name, in the automobile business, of the "Road Louse," because, while it was so small, it pegged along industriously. In Philadelphia, and I suppose it is about the same in other cities, this machine can be purchased for one hundred dollars or less. If a man is fortunate enough to get one that is not worn out it is a very satisfactory little machine, but unfortunately its satisfactory shape is such that as a rule it does not come to be in the market until it is pretty well worn out; so that machines of this class, when they are offered for sale, very frequently have some good reason for it, and that reason is not mentioned by the seller. The next higher machines are those ranging about two hundred dollars. This includes machines of about the period of 1903. The one in mind is a one-cylinder machine, as is the "Road Louse"—it is known as the "one lunker"—but it is much more powerful. That it

is satisfactory is shown by the fact that the makers changed it very little in their later models. As far as I know, they are the only people who are still making a satisfactory one-cylinder machine. It is better to buy such a machine at such a price than a higher priced one offered at a similar figure. In this range of \$200 or \$300 come old makes of almost every kind, too numerous to mention. The greatest disadvantage of all these machines is that if still in good working order, they do not generally reach the public. It is the machines that are "down and out" that are generally offered for sale; and those worn-out machines are a good deal like Oliver Wendell Holmes' famous "One Hoss Shay," "they are worn out all over." You can replace one part one week and another part the next week, until finally your repair bills added to the original cost of the machine would bring the price up to the value of practically a new machine. In the meantime you have gotten little or no service out of the machine, and you have had a good deal of enthusiasm for automobiling knocked out of you. It ends that you are willing to sell the machine at probably a loss, even on its original cost to you.

The purchaser of an automobile must remember that every machine has about its proper valuation in the business world, and if he is offered a high-priced machine for a low figure, there is generally some good reason for it. Of course, one may become involved in a financial stringency and be forced to sacrifice the machine, but as a rule, if the machine is really satisfactory, a man generally holds it, or else it goes to a relative or intimate friend who knows its merit.

I will not take up the question of the various improvements which the different machines have, for every maker has some point in which he is superior to some other maker, and of course, the shrewd advertising agents select such points for their advertisements. But the manufacturers keep a pretty close watch on each other, and if one machine is offered new at a higher price than another it is generally worth that difference. The actual competition is so fierce in automobile circles that it is difficult nowadays for any manufacturer to get a fictitious price for his machine. Therefore, as a rule, a \$1,000.00 machine is better than a \$600.00, and a \$1,500.00 machine is that much better than a \$1,000.00 one.

There are a number of machines which are probably suited for the doctor, and these can readily be ascertained. The manufacturers of these machines seem to have made a special drive for the custom of the doctor; they are all good machines and are steadfast and satisfactory. Personally, I am particularly pleased with a little 4-cylinder runabout. The machine is so powerful in proportion to its weight that it runs entirely to the high gear, and darts in and out of its bigger competitors like a mosquito. There are several of similar make. The cheaper cars use the older system of transmission, the planetary, while the higher priced cars have the sliding gear transmission, which is better and more durable. My personal experience is to put as much money as possible in a machine and get as late a model as possible. A machine more seen in the West is one built largely for doctors. It is truly a gasoline buggy. It runs well, climbs any hill, and goes through snow better than any other. Its principal objection is that it looks too much like an ordinary buggy. The small boy

may smile occasionally, or yell "ice," otherwise it merits no criticism.

It is astonishing how much ground can be covered in an automobile in a given space of time. For example, the writer was obliged to go up into the manufacturing district of Kensington some weeks ago; I did not know the way and was obliged to inquire constantly, yet going through crowded streets and in the unfamiliar localities, I was back to my office well within an hour. Some days later, I was required to go to the same place, and went by street car, going more direct than I had by automobile, because I had the advice of the street car conductors; I was practically half a day going and returning, and instead of being a pleasant trip, I was exhausted by it.

There is a delight about automobiling that is somewhat akin to flying. It gives a charm to the daily life and routine of the physician which nothing else can supply, and he can generally manage to snatch the time for an occasional flying trip to the country. Although I was familiar, I thought, with the beautiful country around Philadelphia, having studied it and driven over it for years, yet I found that I really did not know it at all until I took a number of automobile trips.

J. HOWE ADAMS, M.D.

Philadelphia, December, 1907.

Anti-Athletic Bequest Declined.—Last month, we noted that a large legacy had been left to Swarthmore College on condition that football be eliminated from college life. This has been declined on the ground that the conditions were so arbitrary as virtually to amount to a bribe and that the acceptance of the legacy would establish a bad precedent by inviting an attempt at interference with the management of affairs by future donors.

Dr. George F. Shrady, the founder and for many years the accomplished editor of the *Medical Record*, died in this city, November 30, after a short illness. He was born in New York, January 14, 1837. His paternal grandfather came to this country from Germany in 1735.

Dr. Shrady was an able surgeon, a most active and generally beloved man, and had been a hard worker in the profession for many years.

He retired from the editorship of the *Medical Record*, several years since.

The American Medical Association owes the fact that it stands to-day as the representative of a free and united profession very largely to Dr. Shrady.

A consumptives' class has been formed in St. George's Church in New York City. This is joined only by people in the incipient stage. Two physicians are giving their services free; the class meets once a week for examination and so that each member may bring in weekly reports of his condition. The members must give up work, must follow directions, and must be under no other doctor's care; they must live in the open air as much as possible, and sleep outdoors or with the head in a little window tent, which is provided. There is a trained nurse, who will aid the work, which is similar to that of ordinary tuberculosis clinics. But the class as a whole will support the indigent members and enable them to give up work. This idea was started by Dr. Charles E. Minor, in Asheville, N. C. for his wealthy patients.

RETROSPECTIVE

Medication in Tuberculosis.—It is a most noteworthy report which a Committee of the National Association for the Study and Prevention of Tuberculosis has presented. The able chairman is Dr. Alfred Meyer of New York; and his associates are Dr. S. G. Bonney, Dr. V. Y. Bowditch, Dr. H. M. Kinghorn, Dr. H. R. M. Landis and Dr. C. L. Minor. This report does not take up hygiene and dietetic treatment, climatotherapy and hydrotherapy; nor does it consider surgical tuberculosis. No directly curative medication has yet been discovered; but many drugs greatly improve the general condition by ameliorating different symptoms and indirectly limit the extension of the disease or bring about fibrosis. The committee therefore deplores the general tendency to ignore the use of drugs regardless of their character or special indication in individual cases. Sanatoria should be proving grounds of phthisiotherapy; for it is only where a large number of cases can be observed together that chance influences can be eliminated. In testing any new remedy, whether a drug, a serum, a vaccine or a food product we should select for trial such patients as have derived all the possible benefit from the usual hygienic, dietetic, climatic and hyderatherapeutic measures and whose condition has become stationary under the physician's eye.

The committee is not greatly impressed with the value of *creosote*, except in lessening the secretion from an accompanying bronchial catarrh. The routine administration of this drug is not advised; but in patients with healthy kidneys and whose appetites are increased by small doses (1-3 drops) we may find it serviceable. Albuminuria, nephritis or anorexia are strong contraindications; where they exist the persistent use of *creosote* is severely condemned. *Creosotal* appears to be better borne; small doses should be given. *Guaiacol carbonate* is no more efficient and is more expensive than *creosote*.

Ichthyol may be of value to lessen profuse expectoration and in tuberculous enteritis. *Iodine* is used much less frequently among physicians than among surgeons; gastric irritation is easily produced—a decided objection to its use. The *iodide of iron* is valuable in glandular tuberculosis. Iodoform topically applied to the tuberculous larynx and the tuberculous bladder and for internal use in intestinal tuberculosis, should be of value. Arsenic, in the form of Fowler's solution, or of arsenic and iron in combination, is serviceable if anorexia or anemia is present. *Cod-liver oil* and "mixed fats" are but little used by members of the committee, the food fats being substituted for it; cod-liver oil inunctions may be serviceable in infants and little children. *Phosphorus* and hypophosphite preparations are useful more by a tradition in medicine and by the patient's demand for tonics than by any belief in their intrinsic worth. *Strychnine* in 1-30 grain doses is useful in combination with *guaiacol*; besides *strychnine* combats the atrophy and fatty degeneration of the heart, which are often the result of *strychnine*. (We would suggest the following capsule: *Guaiacol carbonate* gr. v. quinine gr. i, pulv. nucis vom. gr. ¼.)

Tuberculin (either the imported Koch's *tuberculin* or the product of the Saranac Laboratory) does no harm in properly selected cases (incipients without

fever and advanced cases without fever), and in proper doses. Those members of the committee who have used tuberculin for years believe they have seen further improvement in previously stationary cases and open changed to closed tuberculosis. The doses at the beginning of treatment are always small ones (1-20 of a mgm., preferably less. Bonney uses the bacilli emulsion of Koch, beginning with 1-1,000 mgm. He gives the injection only once in two weeks, and believes the opsonic index should be the guide to dosage. Minor makes the initial dose of tuberculin 1-100 mgm., and then increases 1-100 to 5-100 mgm., and regards 99.4° a reaction). All febrile reactions should be avoided. Injections are made every third or fourth day, in the beginning and preferably in the evening. Amounts are very slowly increased, at first by 1-20 of a mgm. at each successive injection, then by 1-10 mgm. until one mgm. is reached, then by $\frac{1}{4}$ or $\frac{1}{2}$ mgm., then by entire milligrams. When larger amounts are reached—50 to 75 mgm.—intervals between injections are gradually lengthened until there may be from one to two weeks' interval when the amounts have reached several hundred milligrams. Any slight febrile reaction is an indication for a reduction of the amount at the time of the next injection, and no injections are given until several days of normal temperature even after a slight rise. A course of injections may be completed in about four to six months, and resumed after a period of several months' rest. Several of such series of injections and rests should be employed.

Cough, in the vast majority of cases, requires no special remedy. Training and will-power will accomplish much to suppress coughing; the inmates of sanatoria seldom cough. For harrassing cough at night, with its attendant sleeplessness, codein (gr. 1-8—1) and heroin (gr. 1-24—1-8) are advised, two or three times a night sufficing. *Fever* is mostly combatted with the rest and air cure. Antifebrin or pyramidon in two grain doses may be used; but even in these small doses sweating is not avoided. For *night sweats* we use atropine (gr. 1-200 to 1-100), agaricine (gr. 1-10), zinc oxide (gr. ij), camphoric acid (Mx-5ss) and the bowels are moved by the use of salines. For *pleuritic pain and pleurisy* we strap; or use small successive cantharidal blisters not larger than two inches square; or apply tincture of iodine; or give aspirin, five grains three times a day. *Haemoptysis* when slight, requires glonoin (1-100 to 1-50 three or four times a day; or sodic nitrite in one-grain doses; the amounts of these drugs should be determined by the blood-pressure, which should be below 120 millimetres of mercury. We may give aconite to constitutional effect; or atropine (gr. 1-25) once only. We give morphine only in severe haemoptysis and then preferably by the needle in conjunction with atropine. We may by giving too much morphine stop the cough, retain the blood, and thus set up a pneumonia. Calcium chloride acts as well in 1-4 grain doses as in doses of 10 to 15 grains; it is therefore doubted if any effect at all is obtained from this drug. The same may be said of calcium lactate. The committee has wisely dropped the use of ergotin. Considering the frequency of haemoptysis its rarity of fatal issue from this cause is rather striking. For *diarrhoea* we give calomel; if of tuberculous origin, iodoform, ichthyol or tannalbin.

For constipation, besides the usual cathartics, oil enema should be more frequently used at bedtime. For tuberculous laryngitis we insufflate iodoform or orthoform. To ulcers we apply 30 to 80 per cent. lactic acid solution, and we order frequent daily inhalations of weak formalin solutions. In many cases we give no treatment except cocainization before meal time.

A New Form of Anaesthesia.—Professor Leduc, of Paris, whose beneficent achievements thus far have greatly enriched science, is reported to have found a method of inducing "natural sleep" so deep as to permit even major operations being done. It is simply to apply intermittently to the head some thirty-five volts. This is not the cataphoresis familiar to us by which the electric currents transmit such drugs as cocaine. Leduc transmits no other substance than electricity; and he is said to be sanguine that his method is quite without danger to life—that it induces no functional disturbance whatever, of heart, or lungs, or any other organ or mechanism.

Such claims as these have been made—and quite recently—for other newly-discovered anaesthetics; yet in routine surgical practice lumbar puncture, the scopolamine method, the use of magnesium salts, and the like seem all to have been discarded. They have not in fact induced a state of unconsciousness sufficiently profound for satisfactory major work. It should, moreover, be borne in mind that the surgeon requires not only unconsciousness sufficient to permit the use of the knife; there must also be complete relaxation of the muscles and tissues and a measurable assurance that an operation once begun shall be carried on to undisturbed completeness. And in these regards nothing has quite taken the place of ether and chloroform.

Claim has been made for the newer anaesthetics that they are much safer than the old. But an absolutely safe anaesthetic is a contradiction in terms. The little experience we have had of the newer methods has abundantly shown them to be by no means entirely safe. An anaesthetic which will induce insensibility sufficiently deep for satisfactory surgery must in the nature of things stand for some danger; any one profoundly anaesthetized is always very near the border line between life and death. This all physicians understand; and that is why we are ourselves, of all people, the greatest cowards and the most unwilling to undergo operation. The reason why the patient so rarely goes beyond the border line lies not so much in the agent employed as in the skill of the experienced anaesthetizer, who knows the properties of the drug he uses, who, after a thorough examination, has taken all precautions, who foresees all possible "accidents," who will not trust to luck, and who remains vigilant throughout and until the return to consciousness.

It is certainly most desirable that search will be continued for an anaesthetic safer than any we now possess; but it is probable that in most cases we shall find no better method than to begin with nitrous oxide—the initial shock due to fright, which is probably the most prolific cause of disaster from an anaesthetic, is thus best avoided—and from this gradually, by the use of a suitable apparatus, to go on to ether. An enterprising and astute colleague has invented a method, by which, to begin with, an odor

of delicious perfume is generated for women, and of an aromatic cocktail for men. The mortality from the old methods is indeed extremely small. "Ether and chloroform rank very high among the most precious gifts of science to humanity; it is they which have made modern surgery possible."

Treatment of Insanity.—Dr. A. P. Williamson, Superintendent of the State Hospital, Patton, Cal., says: A hospital for the insane which makes an effort to keep abreast of the times and to adopt the most progressive methods is no longer an asylum to which the mentally disturbed can be sent for custodial care, but it is an institution in which nursing, good diet, and proper medication are given the patient. State hospitals are not hospitals only in name, but they are establishments where hospital methods only prevail, and where, too, the female nurse is gradually displacing the male attendant. A modern hospital for the insane is an institution in which the acute and recent cases of functional psychoses will have the best chance for rapid recovery, and where the chronic and organic forms may receive such care as will make their lives worth living, and where their mental and physical comfort will receive constant and solicitous care. Thus a properly organized hospital for the insane at the present time consists primarily of a series of laboratories—a physiological laboratory for the study of the manner in which all the organs of the body carry on their respective functions; a clinical laboratory for the separation of physiological from the pathological manifestations presented by various parts of the body, and the determination of the degree to which certain organs are carrying on their physiological functions, modified by the presence of pathological conditions; a psychological laboratory for the study of the mental phenomena presented and the determination of the psychological condition of the patient; a well-equipped pathological and bacteriological laboratory in which specimens may be examined and their morphology determined; and, last but by no means least, a thoroughly well-equipped, well-lighted and modern operating-room, where pathological conditions may be removed and where physical deformities may be corrected. The existence of such laboratories and the systematic study of the human body, from a physical as well as from a mental side, is what differentiates the modern hospital from the ancient lunatic asylum, which the general public is so loathe to discard. The modern hospital makes a special point of the examination of the patient and the individualization and separation of each case from all others. Under the ancient methods cases were classified *en masse*, and their treatment generally was of the same description. Now no such classification applies, but each patient is studied by himself, and each individual receives such treatment as his particular condition requires. The examination of a new patient is now far from a perfunctory exhibition, as it used to be, whose main object was to obtain data to be displayed in a statistical form in an annual report, as such statistics are now deemed useless as matters of information to the friends, or to the public, or to the profession. The examination is exceedingly important; it is a painstaking procedure, intended to ascertain the actual condition of every part and organ of the body which will make it possible to outline a systematic

course of treatment that will enhance the prospect of the patient's speedy recovery.

Another department of the care of the insane which now receives very careful study, but formerly obtained little notice or attention, is the question of diet. No hospital which pretends to be up to date follows the old system of a pair of dietary tables, each one of which was in use two weeks in alternation. The unfortunate patient in such an institution knew, after a few months' experience, precisely what he would receive at any meal any number of weeks or months ahead. The diet for the insane in a hospital of the present day is based upon scientific principles. The basis is the fuel value, the calorie; there is no list of articles, but each meal consists of a specified number of calories, the whole aggregate from three to four thousand calories per day. In other words, the non-worker receives about 100 grams of proteins, 100 grams of fat, and 300 grams of carbohydrates, while the worker receives a slightly increased number of calories, due to there being in his dietary a large proportion of proteins and fat. The science of diet is a new one, and while it has been carefully studied for perhaps thirty years or more, it is really in its infancy. Great praise is due to the indefatigable energy of Dr. Wiley, of the Agricultural Department of Washington, for our present knowledge of the subject.

Medicine is not quite so necessary in the treatment of the insane as we formerly thought it. We now use hydrotherapeusis and dietetics, where formerly we struggled to find a drug which would be applicable to the case. Every patient on admission should receive a carefully studied prescription, and his medication varied as his symptoms or diseased condition requires, but the proper use of diet, such as hot milk in sleeplessness, the avoidance of carbohydrates in certain digestive troubles, the withdrawal of protein in kidney trouble, the use of raw food in certain lung trouble, have now to a very great degree supplanted the use of drugs to overcome the abnormal conditions.

The Principles Underlying the Treatment of Tuberculosis.—Dr. F. M. Pottenger, whose experience in tuberculosis is great and whose scientific communications are always important, concludes (*Therapeutic Gazette*) that this is in large part a disease of the lymphatic system. The germs enter through the mucous membranes, are carried to the lymph nodes and are strained out by them. This being primarily the region where the blood serum comes in most constant play upon whatever intruders find their way into the system, most of the bacilli are destroyed and cause no further trouble. At times, however, the bacilli, despite the conditions unfavorable to their growth, succeed in establishing themselves in these glands; here they multiply and cause a form of infection. We cannot yet say that tuberculosis of other organs, such as the lungs, intestines, bones, joints, meninges and larynx, is always an infection carried directly from the lymphatic glands, for we must recognize the possibility of the disease extending from one organ to another; yet scientific observations point to the glandular involvement as being the primary forms in the body. Undoubtedly we will soon treat early infections of the glandular system with as much justification as we are now treating early extensions to other organs.

If a cure results, immunity has been established. Pottenger does not here mean immunity in the narrow sense as the term is generally used to designate a condition in which an individual sometimes exists wherein it is impossible for him to become infected with a certain specific micro-organism; but in the broader sense which now obtains in modern medicine, designating a certain resisting power which is developed in an infected organism against the specific microbe or its toxins, which produces a given disease. Immunity in this sense is of all degrees; it may be partial, or complete, or transitory or permanent.

In treating tuberculosis we do not attempt, much as we should wish to, to bring about a state whereby a sufferer will be incapable of ever becoming infected again, but we try to strengthen his resisting powers so that he will be able to overcome the tubercle bacilli and their toxins, and thus become cured of his disease. We try to establish in each case an immunity to the infecting bacillus. The production of immunity is a chemical process and is due to a reaction upon the part of the cells of the invaded organism in response to stimulation caused by some foreign element; in tuberculosis this necessary stimulation is caused by tubercle bacilli and their toxins.

The ultimate aim, then, of scientific therapy in tuberculosis is the establishment of immunity: whether indirectly, by improving the patient's general condition and making him more resistant, as is done by placing him in the open air, furnishing him with nutritious food, and training him in the proper way of living; or directly, by artificially increasing the antibodies of the blood by the inoculation of tubercle vaccines. If a cure results it is because the organism is either naturally supplied with sufficient antibodies; or, stimulated by the toxin of the tubercle bacillus, has arisen in its own defense and produced sufficient antibodies to overcome the infection. The various measures we can employ are: 1. Those which aid in bringing about immunity by trying to restore the natural resistance of the patient to a point as nearly normal as is consistent with the condition present; among such measures are fresh air, hygiene, proper diet, hydrotherapy, favorable climate and suitable tonics. 2. Those which aid in bringing about immunity by artificially stimulating the body cells to the production of more specific protective substances. In this class fall vaccination, or treatment by the injection of the specific products of the bacillus, such as tuberculin, extracts of the tubercle bacilli and bacillus emulsion. 3. Those which aid in establishing immunity by supplying to the organism specific protective substances which were produced by vaccinating some animal, such as the horse or cow. Under this head come the various antitoxic sera. 4. Measures by which is induced an increased flow of blood or lymph to the seat of the infection, thus bringing a greater amount of the specific antibodies into contact with the bacilli and causing their destruction; in this way is explained the efficacy of Bier's hyperemia. Finnsen light, poulticing and the local congestive action of tuberculin. 5. Remedies and measures which relieve symptoms. 6. Measures which relieve any secondary infection that may be present. Mixed infection must be combated. Probably Wright and others will soon give us means by which we can determine definitely

the character of mixed infection and apply the proper vaccine for its cure.

Harbors in South America are healthy, declares Dr. L. L. Seaman, who has recently returned from a five months' tour of South America and who was greatly impressed with the sanitary campaign that is being waged in the principal cities of the South American republics, the result of which should make the western harbors below the Equator as disease-proof as any in the world. Rio Janeiro, a city which used to be considered one of the most unhealthful in the world, "is now as safe as any on the globe"; for this beneficent work Dr. Oswaldo Cruz, the Health Superintendent, is responsible. He has a force of 2,000 men under him, and his authority over them is dictatorial; despite graft and chicanery, he has consistently carried out the policies that have transformed Havana and the Panama Canal Zone from disease-infested to healthy localities. Santos and other Brazilian cities are also being made healthy; and Argentina, Chile and the other countries evidence great progress and an awakening to the fact that a country's prosperity is absolutely dependent upon its sanitation. There was but recently hardly an important city on the South American seaboard that was not visited by the bubonic plague; now this dreadful disease is being successfully mastered. In Rio a reward of five cents is paid for every rat that is killed. The man that kills the rat must tag it with the name and street number of the house in which he came upon it. The carcass is hurried to Dr. Cruz's laboratory, and there, if it is found to have the plague, a health squad, organized after the fashion of an American fire company, hurries to the house, no matter to whom it belongs, tears down its ceilings, and then gives it a thorough disinfection. At Panama Dr. Seaman was greeted by Dr. Gorgas who took him through the Culebra Cut—in fact, along the entire line of the canal; "everywhere it was manifest that at last the right men have charge of the work that is to connect the two oceans. Gorgas did the work of preparation when he drove the disease out of the zone and now Gasthals, Gaillard, and Rousseau, with this splendid foundation, are working as only army engineers can, to finish the main structure."

Healthful Psychism.—The work which has been done and is being done by Charcot, Bernheim, Janet, Dubois, Barker and others is fast ridding the field of psychotherapy of such noxious weeds as mental healings, mind cures, esoteric vibrationism, occultism, astrological health guidance and a thousand others. A rational mental therapeutics, based upon suggestion (direct or indirect), persuasion, education or re-education, is now at the disposal of the conscientious practitioner of medicine.

It is a superb sentiment (which, though a sentiment, is based after all upon rational experience), that "the soul is an intelligence served by the organs"; here Dubois is precisely in accord with Schopenhauer, whose dictum was that "the spirit has all matter to choose from," and with Edmund Spenser:

"For of the soul the body form doth take;

For soul is form, and doth the body make."

The psychism, by whatever name we designate it—soul, or mind, or will—is, after all, the entity which dominates life; in making which statement one need

not deny the occasional influence of cranial deformities upon intellect, of anatomical stigmata upon the moral nature, of the weakening of the mind by prolonged illness. Such factors as these latter do not dominate life, as the ultramaterialists argue. They may obtain for a generation or so, but nature soon eliminates the blunder. "The influence of the physical over the psychic is generally exaggerated," states Dubois truly enough. It is, broadly speaking, not the body which dominates the mind; it is the mind which is master of the body. And Dubois and his colleagues rightly hold that many a neurosis and many a functional disturbance may be cured; nay, that many a serious structural disease can in its incipency be dissipated by patience and wisdom on the part of the physician. And there are many vicious autosuggestions which can be corrected. We can sometimes even provide intelligence, as when giving thyroid extract to the sufferer from myxoedema.

Many aggravate brute sufferings by fears and imaginings; the attentive mind increases sensation in any given part: all organs have nerves and are in intimate relation to the cerebral center; emotion fatigues; the conviction of want of power leads to want of strength; many are disquieted about everything and nothing, and this results in physical exhaustion which may in turn be conducive to organic disease—such are pithy and wise observation which we quote, not precisely verbatim, from the small book by Dubois on the *Influence of the Mind Upon the Body*,* which is complementary to his larger treatise; in this single lecture essential and fundamental principles are admirably epitomized.

Inebriety is due to inherent defect in mental mechanism generally congenital, sometimes acquired, declares Dr. R. W. Branthwaite, an English inspector under the inebriates act. "Alcohol, far from being the chief cause of chronic alcoholism, is merely the medium which brings into prominence certain defects which might otherwise have remained hidden but for its exposing or developing influence." It is doubtful if habitual inebriety is ever really acquired in the absence of some preventive defect. Dr. Branthwaite does not believe that the normally constituted individual becomes a drunkard, even if he permits himself to indulge occasionally in a fair measure of careless drinking, without the intervention of nerve shock or other influence sufficiently potent to disturb the equilibrium of nervous and mental mechanism. Sixty-two per cent. of inebriates admitted to reformatories were found to be either insane or defective in varying degrees; only some 37 per cent. were of average mental capacity. Most insane inebriates become alcoholic because of their tendency to insanity; they are not insane as the result of alcoholism; the preceding drunkenness is merely evidence of approaching mental disorder. The mentally defective show certain physical signs of arrested or distorted development, such as abnormally small or misshapen heads, irregularity in the upper or lower jaw and deeply placed eyes. Such cases always evidence impaired development of the moral sense, imperfect control over impulse and defect in power of judgment. Even those of average mental capacity cannot be said to be of entirely reformable individuals; everything depends upon the degree of mental defect. With regard to the

control and treatment of alcohol it seems that the influences which incite or strengthen moral resolution are useful only when applied to inebriates whose mental condition approaches the normal. Drugs are very valuable for the relief of unpleasant symptoms during the transition from long continued drunkenness to enforced sobriety. When it becomes a matter of physical control benefit from such treatment is often lost by too long delay in applying it. Control should be applied before the original defect is increased by added degeneracy.

The three class meat system obtains in Germany (Stiles, J. A. M. A., Nov. 2, '07), whereas in our Federal meat inspection system meats are either "passed" for unrestricted trade or they are "condemned" and thus excluded from use as food. In Germany three classes of meats are recognized officially: A first class, containing meats which are "passed" for unrestricted trade; a second (*Freibank*) class, meats which are allowed on the market under certain conditions; and a third class, condemned meats which are excluded from the food supply. If a form of the *Freibank* system could be modified to suit American conditions, and adopted in place of our present two-class system, a great economic loss would be saved our country, and—more important still—we would have a method which would surely help very effectively to eradicate tuberculosis from the dairy herds. Meats could be divided as follows: 1. Inspected and passed, to be placed on the market without restriction; here would be included fresh canned, and cured meats, and this division would correspond to the present "United States inspected and passed." 2. Inspected and passed as *Freibank* meats, which would include all that could hardly be allowed on the market without restrictions and in fresh condition, but which could, from a sanitary viewpoint, safely be allowed on the market if properly cooked; in order to eliminate any possibility of fraud or any unfair competition with "inspected and passed" meats; all *Freibank* meats should be cooked. If prepared in a registered abattoir they could best be canned and the cans should bear some such mark in raised or depressed letters, as "Inspected and passed as *Freibank* meat." If sold uncanned by a local butcher, State and local regulations should provide that they be cooked and sold under declaration. 3. Inspected and condemned; such meats, being absolutely unfit for food, cooked or otherwise.

Blackening of the Tongue from Hydrogen Peroxide. Bizard has reported to the *Paris Society of Medicine* two of his syphilitic cases in which the patients were treated with injections of gray oil and mouth washes containing peroxide of hydrogen. It might be supposed, observes the *Lancet*, that the peroxide on coming in contact with the mercurialized saliva would induce a reaction resulting in a brown coloration of the extremities of the lingual papillae; but hydrogen peroxide may in fact cause by itself a blackening of the tongue. In a smoker habitually enjoying good health, not syphilitic, and free from constitutional defects, but having a hypertrophy of the lingual papillae, a daily gargle of peroxide in warm water for eight days pronouncedly blackened the tongue; this disappeared when the peroxide was stopped, and the surface of this smoker's tongue soon afterward disquamated in large flakes.

* Funk & Wagnalls Co.

MISCELLANY

Pain and tenderness behind the ear does not always indicate mastoiditis (*Am. Jour. Surg.*); these symptoms may be produced by pediculi in the scalp which often lead to an infection of the deep cellular tissues in this region.

An Excellent Idea.—The management of the Michael Reese Hospital of Chicago recently adopted the "open-door" method, so that now any physician or surgeon can take a patient to that institution for treatment, whether or no the physician is on the hospital's staff.

Xanthomatous patches, the little chamois-yellow papules and macules on the lower lids at the canthi and sometimes on the dorsal surfaces of the hands and forearms indicate either renal pancreatic or hepatic affections; glycosuric patients have exhibited them, states N. E. Aronstam in the *Medical Fortnightly*.

To exterminate crocodiles is the suggestion of Koch who is now returning to Berlin after a prolonged stay in East Africa, where he has been studying the sleeping sickness, which is a menace to the whole of that vast region. The *Glossina palpalis*, the insect which transmits the disease derives its chief nourishment from the blood of this saurian.

Middle Ear Tuberculosis.—The treatment is that of the disease in general, being both prophylactic and active—Bardes (*Med. Rec.*). We should check the progress of the lesion and should tell the patient of the infectious nature of the aural discharge, which should be destroyed as we do sputum, although it is not nearly so infectious as the latter.

A Club of Physicians.—A lawn tennis club in New York City is composed almost entirely of physicians. In the brief hours allowed them by an active practice they keep up their physical condition in hard matches on the courts. Many have brought their love of the game over from their days of hospital service, for several of our city institutions boast excellent courts.

The new Sydenham Society, we regret to note in the *Clinical Review*, is probably to end its activities; it has been for many years a publication society of leading British medical men. The revenues and literary attention of the society has been given almost exclusively to translations of French, German and Italian monographs of high character, and to richly illustrated atlases.

An anti-vivisection play, states the *N. Y. Medical Journal*, was recently produced in Berlin, which was entitled, "For the Sake of Humanity." One of its authors was a physician of that city. A leading character is a worker in experimental medicine, who, in a scene suggesting the nightmare in "The Bells," is haunted by a dream in which he sees the specters of his experimented subjects.

Pancreatitis, states Osler, is of three kinds: 1. Mechanical, such as from stone in the duct, rendering it invulnerable to bacterial invasion. 2. Chemical irritation, from such substances as bile and gastric juice, which on experimental injection in animals has produced acute pancreatitis. 3. Bacterial, this occurring only after stasis, causing the pancreatic juice to lose its bactericidal properties.

Seven medical mayors were recently elected to office in the State of New Jersey; the fortunate cities

are Paterson, Atlantic Highlands, Frenchtown, Rahway, Summit, Trenton, and Washington; as further proof of the esteem and confidence in which the abilities of medical men are held in that State it is to be noted that the only undertaker who sought a mayoralty was defeated in Jersey City.

A Test of Death.—The X-rays seem to have a use of great importance as "infallible" detectors of death. It has recently been declared in the French Academy of Sciences that in a living person the rays show no impression of the abdominal organs, which in life have a certain motion. But immediately death has taken place these organs show up vividly. Many tests were presented in substantiation of this claim.

The Fortunes of Great Physicians.—Dr. Blundell, thirty years ago left £350,000; during his fifty-three years of strenuous professional life Sir William Jenner accumulated £375,000; Sir Wm. Gule died worth £540,000. We are accustomed to consider that medical fortunes do not nearly approximate those of lawyers. But these above-mentioned excel the record fortunes of the late Lord Brompton (£141,000), and of Mr. Murphy K. C. (£234,000).

An automatic milk supply has been instituted as an experiment in London. A slot machine company has devised an apparatus to furnish milk by the pennyworth to people whose circumstances keep them from taking milk from the dairyman. The apparatus is so constructed that there is no difficulty in keeping it clean; if the official requirements as to sanitation and purity of milk are met, as it is certainly expected they will be, such machines should dispose of a large amount of milk in a manner very advantageous for poor people.

A public benefactor is Dr. Park of the Board of Health's Bacteriological Laboratory, who states, in defense of the much maligned New York oyster, that only one-tenth of one per cent of typhoid fever cases may be traced to contaminated shellfish. Let those of us who feel that dinner without oysters is not dinner at all, now take courage; for our product, which comes mostly from Long Island shores, is certainly the best and most palatable bivalve in existence. If the advocates of the British, or the Dutch or even the Chesapeake oyster would be unprejudiced they would admit as much; but people simply cannot be unprejudiced when it comes to such things.

Plugging with soft tissue to arrest hemorrhage from bone is practiced by G. T. Vaughan, of Washington (*J. A. M. A.*, Nov. 9, '07), who has never been able to use with satisfaction Horsley's antiseptic wax, because it will not stick to a wet bone—one that is bleeding—and it is not needed on any other kind. For several years past Vaughan has rubbed muscle or fascia into the cut or broken surface of the bone. A convenient fragment, preferably of muscle, is cut off and applied to the bleeding bone by means of the fingers or some suitable instrument like a spatula or flat chisel and rubbed hard so that the little vascular openings in the bone become plugged with minute fragments of soft tissue. The obvious advantages are that material is always accessible during the operation, it does not require special preparation, it acts not as a foreign body, but more like a blood clot, and seems to be always efficient.

TUBERCULOSIS AND ITS EARLY TREATMENT.

BY S. H. MONELL, M.D., NEW YORK.

IT is doubtful if any other point in respect to tuberculosis has been so long and so persistently preached to the profession as the importance of "early" treatment. Sanatoria steadily appeal for incipient cases and many reject all others. Tons of printed matter annually impress upon the medical mind the fact that almost the only "one thing needful" is prompt treatment in the early stage. Literature would give us the idea that physicians in general prescribed for few cases of tuberculosis until patients were in the advanced stages when drugs must fail. The only clinical picture that arises to the mind when the disease is mentioned is the picture of the despair of the wasted septic skeleton for whom the grave will soon open.

In a treatise before us as we write, published in 1802, the desideratum of "early treatment" is as strongly urged as in our current medical journals. Is it true that in all the intervening years physicians have been withholding treatment from tuberculous patients until the bitterness of disappointing results was inevitable? If true, why? What incentive have family practitioners had to rob the incipient consumptive of early prescribing? Why have the urgings of more than a century still, in our own advanced day, left the consumptive mainly without treatment until most sanatoria would refuse him? What is the explanation of this discreditable and phenomenal anomaly, if it is true? Why do all physicians wait until the second or third stage before they begin a (then) futile attempt to rescue these victims?

Clearly, the truth is the exact opposite. Physicians have not withheld their services from the earliest of these cases. A moment's reflection will assure us all that "early treatment" has been the well-nigh universal rule with scarcely an important exception: that tons and barrels of cod liver oil, creosote, and the hypophosphites, have been poured into incipient cases, and that not only back of the cavity stage, but earlier than the earliest physical signs, clear back to the onset of the bronchitis, grippe, or pneumonia, or other predisposing condition, the family physician was doing his duty as he saw it and prescribing to meet the indications of his patients. Every one of them had earlier treatment than is ever spoken of by the phthisio-therapist. Even those who patronized the obliging druggist instead of the doctor had the benefits of tonics, cough mixtures, and "consumption cures" galore. Nowhere can we detect a lack of early treatment, antedating even the first suspicion of tubercle deposit. Down the entire career of their disease most consumptives can point to the varied and persistent treatment they have had and many will claim that they have literally "tried everything."

It is without bearing on the subject to argue that most of this early treatment is not prescribed for tuberculosis *per se*. The important fact is that it is prescribed to meet existing indications, often before the tuberculosis exists, and if drugs were effective to prevent or arrest the tuberculous process fully three-fourths of all cases ought to be prevented by work of the family physician who has preceded the bacillus, or been present at the first entry of the bacillus, and who has made repeated efforts to restore the state of health in a large majority of all the persons who pass

through the period of incipency. Therefore the plea for "early" treatment seems to be heeded everywhere and the demand for it supplied by the entire profession.

What, then, is the excuse for the constant reiteration of such an appeal? The excuse for making it is to be found in the fact that the profession still fails of the general application, either early or late, of a complete plan of efficient treatment which welds together in one therapeutic chain all the links of approved measures that must combine to make treatment decisive.

Certainly the city routine of drugs and advice is incomplete and unsuccessful, and the country routine of "open air life" is unadapted to the majority of city patients for they must remain where the necessities of home or business keep them. The routine "open air" plan is not less incomplete than the routine drug plan or the routine plan of any kind that incorporates less than the entire requirements of complete treatment. These requirements may be stated as follows:

1. Rational personal hygiene.
2. Good air every hour of the daily twenty-four.
3. Well balanced nutrition.
4. Such medicine as can assist in best meeting indications.
5. Definite therapeutic actions obtained by means of rightly prescribed physiologic agents.

These five links make up the sum of decisive treatment, and in their entirety constitute the rational treatment that ought to be administered "early," clear back to the incipient and still further back to the predisposing stages of every case. Had this been done for the past ten years there would now be few deaths from consumption and few third stage cases mocking at us for our failures. If the plan of these five links is prescribed for commencing cases during the next ten years the generation to come will wonder at the almost complete disappearance of this preventable disease.

The most neglected link in the therapeutic chain is the last. In importance it ranks first in the actual prescribing of the physician, for it is admitted universally that no drug is curative of tuberculosis yet many cases have been arrested by the skilled use of physiologic agents.

The first four factors in the five links of a complete plan of treatment are the province of the family physician who can direct them as rationally in the city as in the country and individualize according to the patient's needs. The fifth and decisive link in the therapeutic chain is the province of the skilled expert in the actions of physiologic agents and who possesses the modern equipment of necessary apparatus. Between these agents and the family physician there must be entire co-operation or tuberculosis will not be decisively treated. There is no middle ground. Just so long as physicians omit to use the help of physiologic therapy just so long will they sacrifice lives to the incomplete treatment of phthisis. To understand why this is so let us compare a few of the actions of nature in the open-air system with the more decisive actions of physiologic agents.

For instance, we may have a case in which the respiratory capacity is diminished one-third. Suppose we send him to Saranac or New Mexico to breathe: how well can he do it when he gets there? Will his

lungs expand vigorously and let his air cells fill with air? Restricted respiration is the two-edged sword of tuberculosis. A healthy man 5 feet 8 inches high can expire 230 cubic feet of air—the measure of a full breath. A writer states that in the first stage of consumption this falls to 154 cu. ft., in the second stage to 131 cu. ft., and declines to 108 cu. ft., in the third stage.

It takes a long time to greatly increase the chest expansion and intake of oxygen if the patient simply breathes fresh air as best he can unaided, and tries to strengthen his respiratory mechanism by the routine exercises. But by means of the decisive energy of physiologic agents we can set up actions in the muscles of respiration which will almost at once produce a marked freedom of expansion and rapidly double the intake of fresh air. The rate of respiration will be brought down to more nearly normal in far less time than nature does it when physiologic aid is left out. These benefits cannot be ignored.

Suppose the patient cannot free the lungs of accumulated, thick, adhesive exudate. Suppose his paroxysms of efforts to expectorate are very exhaustive. His cough is frequent and severe. We all know the sufferings of this condition. How rapidly will the "open air" method alone soften and free the exudate, ease the cough, and turn the stormy paroxysms into gentle zephyrs of scarcely appreciable effort? If we add drug sedatives and expectorants to nature are the results entirely satisfactory? But some of the most gratifying work in the field of medicine is done right here by physiologic agents, either supplementing the temporary use of drugs, or often without help at all. The rapidity with which the character of the sputum is altered so as to be readily raised without tax upon the patient is a marked gain upon the nature method.

The cough itself and the nervous tax upon the patient of irritative and expulsive efforts with exhaustive frequency, especially at night, make any form of relief welcome and yet the usual action of cough sedatives is temporarily palliative, and if they must be freely used and long continued the by-effects are prejudicial. They have no intrinsic "curative" action. But the physiologic agents have a sedative- tonic-healing action which improves the nutritional blood supply through the throat, soothes the seat of irritation, raises the nerve tone, greatly diminishes the labor of the cough and, in a favorable case, gradually removes the cough entirely. Patients who have been having frequent severe choking paroxysms have been rapidly eased so that they would get comfortably through the day, have a short session of clearing out the lungs at bedtime and again in the morning, with restful sleep for most of the night. These benefits can be set up in the tissues by the use of physiologic agents and not in the same degree or quality or swiftness by any other measures with which we are at present acquainted. And it may be said in passing that just in proportion as we can heal the tissues which express their irritation in the cough and can increase the respiratory capacity, the prognosis is favorably affected. Complications which prevent us from setting up these twin actions affect the prognosis unfavorably.

Still further, take the muscular system: suppose we advise the patient to walk each day on a graduated scale of increase in exercise. If he is troubled with

muscular soreness and debility so that walking is hard, fatiguing, and disliked, he will evade it or be unable to do it as directed, or if he makes the effort, how long with the unaided "open air" system take to build up his muscle fibres to normal energy and tonicity? Nature does it slowly.

But we can set up rapidly energising contractions of the muscle fibres by means of the physiologic agents, remove all muscular soreness, tone up the motor nerves, build up the strength and not only make voluntary exercise possible, but make it enjoyable, and greatly increase its value. This is done with no tax upon the heart or motor centres, with no reaction of fatigue, but with a refreshing and tonic effect that no other measure can approach.

Assume again, that the patient gets up a temperature. We put him in bed. But if in addition to rest we set up an eliminating action by means of physiologic therapy we rapidly reduce the auto-toxemia and get the temperature back to normal. In hemoptysis the same agents can be prescribed in addition to rest and the healing process will make far more satisfactory improvement.

In most of these cases there is a deficient capillary circulation. The open air life acts upon it slowly. Physiologic methods can dilate the capillaries of the surface and promote an energetic circulation through them with very positive benefits.

In dealing also with symptomatic disturbances and with complications we again find the resources of physiologic therapy greatly in advance of nature. A wide variety of reflex and secondary pains and troublesome conditions can be readily abated with these agents. Take, for instance, the pain of pleuritic adhesions. Some patients come to us who have worn plasters and taken drugs for relief of this hindrance to full respiration for many months, but when we attack the adhesion with a combined counter irritant and muscle-contracting action set up in the tissues by an efficient physiologic agent the first moment gives some relief, and the first treatment gives relief for a varying length of time, often half a day. A few treatments in this manner reduce the pain to a mere remnant of former sharpness, and the final and lasting removal of the pain is mainly accomplished in a short time. Rarely does this complication linger long. Even if a small recurrence is reported later it is readily removed and ceases to give the patient any concern whatever. All plasters, drug remedies and local applications for pleuritic pain appear medieval to one who works with the decisive physiologic agents.

And so we could go on, pointing out the indispensability of these agents in any complete plan of treating tuberculosis. They are an essential part of the work of the physician and cannot be replaced by any of the other fundamental requisites—by food, fresh air, medicine, rest, exercise, or the entire resources of outdoor nature. Their work is definite. They supply our only decisive means of acting upon the physiologic powers of the tissues. Their field of action is the energising of physiologic processes of the functions of nerve cells, of glandular organs, of the mechanism of circulation, secretion, respiration, digestion, and metabolism. They alone among medical agents can produce energising contractions of muscle fibres. They alone can bring to the support of nature the

stimulus which makes nature most effective. In one scale of the balance put all other measures of the approved open-air system of treatment; in the opposite scale put the decisive resources of physiologic therapy, and their level of value will be indicated. To omit them is to omit one-half of the beneficial means at the command of the physician.

If these resources are added to the customary prescribing in early periods of tuberculosis the percentage of "cures" (for this word would then be permissible) would rise in private practice to the level of the best claims of the most optimistic phthisiotherapist in Germany. It can be done. It simply rests with the family practitioner who first has charge of the case. All he has to do is to prescribe indicated physiologic treatment in addition to his other treatment. And right here comes in one of the most important phases of this work. In the predisposing conditions, and in the early state when the diagnosis is no more than deemed probable the physician hesitates to declare the suspected diagnosis and to put the patient on a long course of anti-tuberculous medication and hygienic routine. Especially does he hesitate to order these patients away, with all the sacrifice involved. But there are none of the objections to physiologic agents in these important early weeks that pertain to internal medication. Creosote, cod liver oil, the hypophosphites, etc., are not to be imposed upon the patient for months without convincing reasons.

But if the suspected diagnosis is right or wrong, if the patient is below physiological par at all and in need of a physiologic uplift of his tissue-resistance these external agents can be employed without drawbacks and with the most satisfactory and gratifying results. We do not do our whole duty if we fail to meet the indications of these early states, and the decisive means of supporting medicine and hygiene reside in the resources of physiologic therapy. They do not conflict with any other measures. Any physician can employ them in his own office for the technicians are fully taught in our books. Even the physician who has no equipment of apparatus and has this part of the treatment done for him will retain the full control and treatment of his patient with a net gain in results and no shrinkage in his income. In a large majority of his cases of tuberculosis the physician in city practice has no alternative. Treatment without the physiological agents is almost unthinkable at this stage of the world's knowledge. Make "early treatment" complete treatment and the problem of combating tuberculosis will be solved.

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A new blood test has been devised by Max Einhorn (*Med. Rec.*, June 8, '07); it is applicable to stomach contents, feces and urine. Paper sensitized by ben-zidin is immersed in the solution to be examined, and a few drops of hydrogen peroxide are added, when a blue or green color appears in a few seconds if blood is present; we should not wait more than a minute for this reaction, as after that time the color may be due to the presence of other substances than blood. HCl may cause the reaction after two or three minutes. The ben-zidin test can be recommended as a preliminary test; a strong reaction or no reaction at all gives a reliable test.

BRONCHIAL ASTHMA AND ITS TREATMENT.

BY W. T. MARRS, M.D., PEORIA, ILLINOIS.

ASTHMA is one of our queer and interesting diseases and one in which there is not much pathology or much other tangible basis for its causation. This being true in cases that are for the most part uncomplicated by other affections asthma is usually regarded as a neurosis. Because it is classed in this category is not to regard it as an inconsequential matter, for many conditions that we do not thoroughly understand we are disposed to label as **neurotic** or **idiopathic**. These terms, like charity, are often used rather expansively. The term **asthma** is sometimes used loosely and made to cover attacks of dyspnoea that may arise from heart disease, bronchitis emphysema or other causes. But true asthma is in the main a spasmodic affection in the bronchial tubes and muscles by which breathing is so embarrassed as to threaten immediate dissolution.

Asthma is in its manifestation a nervous affection with marked vasomotor disturbance. The pneumogastric nerve and its filaments is the one principally concerned, although branches of some of the other cranial nerves are often involved. In most cases that are carefully studied from an etiologic standpoint some primary cause may be found, some diathesis or idiosyncrasy upon which the disease seems to depend. It is a condition that is quite transmissible by heredity and it is no unusual occurrence for several members of a family to be afflicted. There are more sufferers under forty and children make up a pretty good contingent. The gouty and uric acid condition is nowadays thought to play a significant role in the causation of this disease. The renal and hepatic functions have been pretty thoroughly exploited in recent years and put down as causes of many obscure ailments, and the fact that in asthma the urine shows a decreased amount of urea and other toxic constituents in some cases has given this assumption considerable weight. Treatment directed along that line has been conducive of gratifying results according to some observers, but according to others not so good. For the convenience of investigation it is well to group the immediate causes in the following manner:

First we shall consider those cases which seem to depend upon some reflex, either direct or indirect. Lesions of various sorts may be found and their irritation of the vagus or some of its branches may account for the paroxysmal attacks. Enlarged lymphatic and thymus glands, growths in the neck and region of the bronchi, morbid changes in the brain and spinal cord, these and many other conditions may be productive of asthmatic attacks. Enlargement of the bronchial glands is a frequent cause in childhood, this being a condition that so often follows the exanthemata. Scrofulous and rachitic children are very prone to asthma, as in these there is also a tendency toward enlargement of the bronchial glands and a thickening of the bronchial mucous membrane. In other cases the irritation seems to be in the mucous membrane of the nose or naso-pharynx in which there is extreme sensibility. Nasal polypus is a frequent cause of the reflex variety. Chronic atrophic rhinitis and affections of the inferior turbinate bone

are especially liable to produce asthma. A number of throat affections may also be factors of causation. A granular condition of the pharynx and enlarged tonsils are the more common throat reflexes. Removal of enlarged tonsils have relieved many cases of asthma in children. Overloading the stomach is a not infrequent cause both in children and adults. Many persons are so susceptible from the stomach reflex that the least indiscretion in diet may provoke an attack. This may be a result of the mechanical irritation of the food, or it may arise from the gases caused by fermentation. Other reflex irritants that may cause or at least act as an auxiliary in producing asthma are worms, piles, pregnancy, prostatitis, ovaritis, lithemia. It seems to complicate chronic eczema occasionally. It is very prone to occur after cessation of discharges from the ear and the healing of old ulcers and sores. In such cases the asthma probably depends upon the same diathesis as do the other morbid conditions.

In another class of cases we may consider those that are complicated. Asthma co-exists very frequently with cardiac disease, emphysema and chronic bronchitis; occasionally with rose cold or hay fever. There may be other chest and respiratory affections, such as spasmodic ailments of the larynx, pulmonary oedema and hydrothorax, that either simulate or complicate asthma, and these should all be carefully noted in rendering a diagnosis.

In the third group of causes may be mentioned the reaction of the nasal and bronchial mucous membrane to the inhalation of certain kinds of air and stimuli. Many persons are soon in the throes of an asthmatic attack from inhaling powdered ipecac, certain gases and vapors, burning matches, sealing wax, unusual atmospheric conditions; also the emanations from certain animals. Some one has pointed out that in these cases there are so-called "asthmatic points" in the pharynx or bronchi where there are areas of lessened resistance on a neurasthenic basis which react, after a certain amount of irritation, in the symptoms of an asthmatic paroxysm. A great many similar opinions have been advanced with the idea of putting this disease on tangible grounds. Anent the behavior of the mucous membrane toward atmospheric conditions is only a matter for speculation. The pure air of the mountains and seaside ameliorate the symptoms of many asthmatics, while it only aggravates matters with others. One of the anomalous features of this disease is that more find relief in the fog and smoke of a large city, as London and New York, than they do in the country and small towns. These vagaries rather emphasize the neurotic trend of it.

The three groups of causes above named are recognized by a number of writers, although they may in considerable measure blend until it is difficult to say what the dominant element in a given case may be. Some cases are neurotic, pure and simple, no clear physical causes being in evidence. I do not believe in being hampered by too much classification, but if I were going to put down another condition that would include causative factors it would be that of toxic or autotoxic. Into it we could dump all the dyscrasias and diatheses that are not well understood; among them alcoholism, syphilis, uricacidemia,

drug addiction, etc. Cases of asthma have been traced to poisoning by lead and mercury. The writer knew two men, uncle and nephew, in whom a moderate dose of quinine would produce an asthmatic paroxysm and an urticarial rash. Until the latter made its appearance the choking and suffocation was intense. Some writers have described this affection as an urticaria of the bronchial tubes.

To describe the pathogenic condition grossly and in brief we might put it in this manner: (1) An oedema or hyperemia of the mucous lining of the tubes. (2) A spasm of the muscles of the smaller tubes. (3) A spasmodic action of all the muscles of respiration. (4) A bronchiolitis with characteristic mucous deposits.

The symptoms of asthma are usually unmistakable, although errors of diagnosis have been made, especially in complicated cases. There may or may not be premonitory signs of an approaching attack. The subjective feelings by which the sufferer may know that a spell is imminent are these: Languor, vomiting, abdominal distress, eructations of gas, desire to yawn, depression of spirits, or some peculiar psychic manifestation. Sometimes an attack is engrafted upon a catarrhal condition that results from exposure or indiscretion of some sort. Perhaps in a majority of cases the individual goes to bed feeling well and awakens toward morning to find himself gasping for breath. The clinical picture of a person in the grasp of a severe attack is very distressing. He feels as if his chest were being compressed between gigantic hands, and he sits up in bed with his hands on his knees, gasping with mouth wide open. He experiences an intense feeling of suffocation and demands that the doors and windows be thrown wide open. The breathing is very labored and irregular. The expiratory act is greatly prolonged, ending abruptly with a short inspiration, to be followed by long expiratory breathing. This process renders the respirations extremely jerky. The lungs remain in a condition of acute over-inflation. The auxiliary muscles of respiration are all brought into requisition, although the chest remains almost motionless. The face becomes turgid and the individual may become dripping with perspiration. At this stage there are emitted wheezing sounds and whistling ronchi which may be heard some distance away. If the spasm is a severe one and it is not interrupted, the temperature may soon fall, the surface of the body become cold and clammy and the features assume a cadaverish look indicative of death. The pulse is rapid and thready, the eyes are prominent and the sufferer speaks in a hoarse, low voice, often with such difficulty that he prefers to make signs. While the spell lasts the thorax is considerably expanded and the heart-sounds very much muffled. There is an excessive inflation of the lung tissue on account of the spastic contraction of the bronchi. The vesicular murmur is absent or obscured by the strong sibilant and sonorous rales. The duration of an attack is variable. Usually it lasts less than an hour, although it may be prolonged for a number of hours. In old and extremely stubborn cases it may cover a period of several days.

As the paroxysm subsides mucous rales take the place of the sibilant and the patient begins to cough

and expectorate. Although the chest symptoms may have been tight in the beginning, as relaxation and improvement begin, there is more or less secretion of a greyish-white, tenacious or frothy character. There is an exudate into the bronchioles (Curschman's spirals) which when expelled by coughing look like little twisted masses of pearly mucus. In severe cases there are blood-streaks and even hemorrhage may occur quite profusely. It is an invariable rule for the spasm to end in a moist and catarrhal condition.

Asthmatic attacks may be marked by a certain degree of periodicity in some individuals, while with others their recurrence may be very irregular and uncertain. As a general rule the more severe the paroxysm the less frequent the occurrence and the sooner it is over. Some have attacks only once or twice a year, and with others their immunity may last only a few weeks at most. Many women are subject to it once a month co-incident with the menstrual period. Many persons can reasonably expect freedom until they are subjected to their own exciting cause. During the interim most asthmatics enjoy reasonably good health if their case is not complicated with other ailments. Those who suffer from chronic bronchitis, emphysema or other chest or respiratory diseases may suffer an attack on slight provocation. For a few days following a paroxysm the patient may suffer from a feeling of muscular soreness and fatigue.

As already intimated there are few physical signs aside from the clinical picture of the attack. Very few deaths have occurred in the acute stage and there have therefore been few autopsies looking toward the morbid anatomy. Indeed there has been found, in uncomplicated cases, little more than a congested and oedematous mucous membrane. It should be borne in mind that nervous influences play considerable part in causing the trouble. As to the *modus operandi* of the process about as tenable a theory as I have observed is that described by Roose in his work, "Nerve Irritation," which is as follows: "The smooth muscular fibres in the middle-sized and smaller bronchi, to which the pneumogastric nerve is distributed, are thrown into a state of tetanic contraction; the interchange of air is thus rendered not impossible, for life then would cease, but extremely difficult. The powerful muscles of inspiration are able to overcome the increased resistance, but the expiratory muscles fail in this respect. * * * If the interchange of air were reduced below a certain point, death would, of course, follow; but here the self-regulatory power of the respiratory act comes into play, the accumulation of carbonic acid in the blood acts upon the vagus centers, the spasm of the bronchial muscles is relaxed, and expiratory acts are once more possible."

The spasm of the bronchial muscle is to be regarded as the predominating factor, and the fluxionary hyperemia is a strong auxiliary. Organic disease of the lungs or heart often follow chronic bronchitis. Perhaps the more common is emphysema, as so much distention of the alveoli results in the loss of their elasticity and becoming permanently dilated. The more common cardiac complication is hypertrophy of the right ventricle with dilatation.

The diagnosis of asthma should not, as a rule, be difficult, but the complicating factors may not always

be at once in evidence. The diseases and conditions with which it may be confounded have had at least casual reference. Asthmatic dyspnoea and cardiac dyspnoea are somewhat similar and both are most likely to occur at night, but the wheezing and rales in the latter are absent. In the dyspnoea due to pulmonary oedema there is not such a rapid onset of the attack and the rales present are liquid, bubbling and stationary. In asthma the rales are dry and change in location and character. In croup the dyspnoea concerns inspiration; in asthma it is always expiratory. In the aged a pericarditis with effusion might be confused with asthma, but the heart symptoms in the former case with absence of rales are important diagnostic points. Attacks of shortness of breath are common in emphysema, but they do not come on suddenly and unexpectedly. As previously stated an emphysematous condition frequently complicates asthma and the peculiar, barrel-shape of the chest is diagnostic. Dyspnoea frequently complicates bronchitis, but the attacks do not come on suddenly, and are usually referable to a distinct cause, such as an extension of the original affection. The two conditions may coexist, either having preceded the other. In hysteria there is occasionally seen a spasm of the diaphragm that may simulate asthma. Nightmare accompanied by dyspnoea may resemble an asthmatic attack, but on the return of consciousness the breathing becomes easy and tranquil; whereas in asthma the dyspnoea grows more profound after the patient awakens.

The prognosis depends upon the age and the condition upon which the disease depends; if the latter be removable the prognosis is good, especially in younger persons. A great deal also depends upon the management of a given case and the manner in which the individual avoids those things calculated to perpetuate his suffering. Many asthmatics are long-lived. Knowing their condition so well they usually observe a rigid hygiene and avoid everything harmful to them. The younger the patient the better are his chances of recovery. Increasing complications always increase the unfavorable aspect of a case. If the attacks do not occur at near intervals and are not severe or prolonged the prognosis is better. If in addition to this there is good health between the attacks and an absence of organic disease the patient ought, under the proper environment, be restored to health. The attacks are in the beginning usually quite virulent, but as the disease progresses they become lighter and the patient suffers more or less dyspnoea and wheezing all the time. Among other complications not named there is one that deserves a special word of mention—the morphine habit. The practice of giving a hypodermic of morphine to abbreviate an attack has led in many instances to an engrafting of the narcotic habit. The dread of an attack often causes the victim to use the "gun" when the first symptoms manifest themselves. Several repetitions may be thought necessary and the habit is established with the greatest facility. The writer knew for years a professional man who was incapacitated for his work a goodly portion of the time by reason of asthma. He seemed to think the morphine injections were necessary for his relief, and in order

to obtain it he would send for one physician after another who would, without knowing what their predecessors had done, administer a hypodermic. On one occasion by this method he received a toxic quantity of morphine which endangered his life, but which also caused a revulsive influence in his mind by which he was enabled to quit the use of the drug. As a consequence he recovered from his asthma and gained up in flesh and is now quite a well man, although getting along pretty well in years. In this case it would be hard to say which was the dominant factor, the disease or the habit. Asthmatic patients acquire drug habits with great ease and rapidity, and narcotics should be administered with much caution and conservatism.

Treatment.—This resolves itself into the management of the case looking toward prevention of the attacks as well as the relief of the immediate symptoms. These two lines of treatment may in some measure overlap, as the best remedies for preventing the attacks may afford the most relief when they are present. The remedies employed for relief of the spasm are legion and for the most part comprise antispasmodics, depressants and stimulants.

First we will consider inhalants and agencies used more or less in a local manner. Of this class there are not a few. It may be poaching on old and well-known preserves to refer to some of them. The oldest and perhaps the most prized of this class of agencies is the nitre paper made by saturating blotting paper in a warm solution of nitrate of potash, two ounces of the latter to a tumbler of water. After drying the paper should be burned rapidly and in generous quantities in the patient's chamber, and as the air becomes suffocating and unbearable to the attendants the patient begins to breathe with ease and comfort. The fumes must be strong and thick if relief is to be obtained. The ozone papers sold for this purpose have iodide of potassium incorporated with the nitre, and some of them also contain chlorate of potassium in order to increase their combustion. Stramonium leaves and drugs of this class are employed in a somewhat similar way in order to get the benefit of their fumes. A number of proprietary powders of this class are on the market. One that finds a good deal of favor is made by mixing two ounces of coarsely powdered stramonium leaves with an ounce of powdered nitrate of potash together with an ounce of powdered anise fruit. A little of this placed on a plate and ignited gives off dense fumes which usually afford prompt relief. Mullein is also used with other remedies in this way and is serviceable; the same is true of arsenic. Powdered tea also enters into a good many of the asthma powders. Tobacco smoke helps many, but mainly those who are not accustomed to its use.

Chloroform cuts short the spasm very promptly, but it immediately returns. It is an unsafe remedy if there are cardiac complications. It is inconvenient to let the patient inhale chloroform properly, as he usually declines to take a recumbent posture. Ether is much safer than chloroform, but its action is slower and less dependable. Ammonia is of some value if the fumes be not too strongly pushed upon the patient. The old ACE mixture of ammonia, chloroform

and ether is valuable if judiciously used. Nitrite of amyl by inhalation is serviceable in some cases accompanied by high vascular tension, but while it is theoretically a very appropriate remedy, its clinical value has not entitled it to the rank of one of our best remedies. Many cases are relieved by a fine spray of ipecacuanha wine, and is especially useful in cases in which there is bronchial inflammation. Steam inhalations of terebene, menthol, eucalyptol and agents of this class are sometimes of benefit and at least help to keep the sufferer's mind employed—a not unimportant matter when we consider some of the etiological factors. The vapor of iodide of ethyl was employed considerably a few years ago and it has expectorant as well as relaxant properties. It may be obtained in capsules like amyl nitrite. It is also put up in capsules with chloroform. Compressed air and oxygen have been tried, but their value seems to be uncertain and they have never been employed to any considerable extent. The same may be said of oxygen-water. If the attack seems to arise from sensitive areas in the nasal mucous membrane painting the latter with a solution of cocaine may ameliorate the symptoms. More recently intra-tracheal injections have been employed with the idea of getting the medicament as near the trouble line as possible. The agent used is a combination of glycerine, menthol and gelatine. It is hard to say whether the beneficial results reported from this therapy are due to sedation or revulsion. Blisters are also used over the chest and it is quite popular to paint over the course of the pneumogastric nerve with a strong solution of iodine.

As to hypodermic remedies we have only a few that may be employed with conservatism. It can not be questioned that morphine in from one-half to one-fourth grain doses together with one-fiftieth grain of atropine will afford temporary relief in the majority of cases; but in cases where there is idiosyncrasy or a likelihood of the habit being produced other remedies should be employed. The therapeutic benefits of morphine in time become lessened and there is an ever-increasing demand for larger doses. If possible to keep the patient in ignorance of what is being used the danger of his becoming an *habitué* is in some degree lessened. Hyoscine gives good results when administered subcutaneously and is not so open to the objections that attend the use of morphine. The hyoscine habit has at any rate not become popular as yet. The writer is very partial to apomorphine as a remedy to break the bronchial spasm, as it is safe when used judiciously, and there is no tendency toward the formation of a habit for the drug. This remedy should be given hypodermically, in say one-tenth grain, and emesis and general relaxation soon follow. The after-effects tend toward sleep, although it is not a narcotic *per se*. In giving apomorphine to old and infirm people the same cautions must be taken into consideration as when giving any other strong remedies. The more the physician familiarizes himself with apomorphine the more, in my opinion, will he use it in asthmatic spasms. It will usually prove disappointing if given by the mouth, for this is one drug that must always be given subcutaneously if its best and promptest results are to be obtained. Cocaine is used hypodermically, but we

have safer and better drugs. Hypodermics of glonoin and strychnine are valuable in old people where there are rigid arteries and a crippled heart.

There are many remedies that are given by the stomach route to relieve the embarrassed breathing. The list is necessarily a long one, for what will relieve one person may only aggravate another, and remedies lose their effect, so to speak, in the same individual. There are, however, quite a number of therapeutic agents that will ameliorate the symptoms in the majority of cases. The patient usually has some preconceived idea of what class of remedies will afford the quickest relief, and this is an index that the physician should not ignore. As a rule we are obliged to administer to the asthmatic on somewhat tentative grounds. Chloral hydrate will promptly relieve nearly all cases, but it must be given in large doses, say fifteen to thirty grains. It may be given per rectum in still larger doses. It should be remembered that chloral is one of the most direct poisons upon the heart, but if the person has used it safely on previous occasions we may reasonably expect no untoward results from it again, even in considerable dosage. Lobelia is an old drug that was at one time used quite a good deal but is not now so popular. It has somehow gained the reputation of being dangerous, but this assertion is, I think, wanting in corroboration by actual facts. It is as safe as any depressant remedies that really depress and should be given to the point of producing effects. A reliable fluid extract should be the preparation chosen. Belladonna may usually be depended upon to give satisfactory clinical results. Its alkaloid has many adherents. Van Noorden advises that atropine be given 1-128 grain daily and gradually increase to 1-16 daily; then as gradually reduce the dose back to the same as in the beginning. Stimulants are not without value, perhaps caffeine and hot coffee being about the most useful. Alcoholic stimulants may be of signal benefit and should be administered in the form of a hot toddy.

The treatment that will give permanent results should be diligently searched for. Complications must have appropriate attention. If bronchitis is a factor it is probable that more benefits may be expected from climate. The matter of climate, as already suggested, is another tentative procedure, a case of "cut and try." Usually a climate the opposite of the one where the disease was acquired will promise better results; the sufferer in a low, moist location may derive benefit from a region that is high and dry, or vice versa. The place that is salutary for one may be hazardous for another. A strict observance of hygiene, correct habits and in general an avoidance of those things known to be harmful will serve the asthmatic a useful purpose.

As autotoxemia and an insufficient elimination of various and more or less correlated toxins may serve somewhat in the production of asthma, elimination is a thing that should have whatever attention its importance demands. Secretion and elimination of the hepatic, intestinal, renal and dermal functions should be well maintained. It is unquestionably true that in some cases homely drugs like calomel and salines may have a good deal of prophylactic value. Attention to all the emunctories is worth while in this dis-

ease. Digestion and assimilation must be made to go on in as nearly normal a manner as possible. To this end food should be taken which is easily digested. The diet in old age should especially be strictly regulated. This is one disease in which water should be taken sparingly and only after meals. The patient should eat no fats and very little lean meat. Fruits and cereals should make up the main part of the dietary. The morning or noon meal should be the principal one, and the supper is to be very light and taken several hours before retiring. If the excretion of urea is below what it should be and there should be gouty or nephritic symptoms in evidence a diet of buttermilk should be enjoined. The last named symptoms are usually benefited by water in copious quantities if there are no contraindications.

If there are reflexes they should be sought out and so far as possible removed. Perhaps the most common of these are nasal polypi and hypertrophy of the inferior turbinate bones. The snare, cautery and chromic acid are the agents by which to correct these troubles. If the asthma is dependent upon the inhalation of foreign particles of some kind, as arise from various occupations, the treatment readily suggests itself. Whatever is abnormal should be made right.

Of drugs from which we are to expect permanent results the iodides are top-liners. Arsenic is a close second. Belladonna is also a remedy from which we derive both temporary and lasting benefits. The iodides must be given in large doses. The dose may be in the minimum or moderate at first, but should ascend as the patient gains tolerance. Arsenic may be given along with the iodides. Perhaps no other drugs affect metabolism in this disease so favorably as the iodides and arsenic. Their action in this regard seems to be synergistic. Iron may be a useful adjunct, especially in case of anemic children. Quinine may be useful if there is a malarial element. Some writers claim that quinine has a distinctly abortive effect in cases of asthma characterized by periodicity and that withdrawal of the drug is to invite a return of the paroxysms. In general the efficacy of quinine is to be questioned. Grindelia robusta enjoys quite a little reputation as well as a number of bronchial relaxants.

A combination that will be of much service, especially in cases in which the dyspnoea and distress are more or less constant is the following:

R Potassium iod.....	5II
Fowler sol.....	5I
Wine of ipecac.....	5IV
Tinct. hyoscyamus	5IV
Camphor water	5VIII

S.—Take a tablespoonful in water after meals three times a day. Any parts of the prescription may of course be modified to suit the exigency of any case. The iodide is here given in the minimum dosage. Another good combination is the following:

R Fl. ex grindelia robusta.....	5I
Tinct. lobelia	5II
Tinct. belladonna	5II
Potas. iod.....	5Iss
Syrup and water qs. ad.....	5IV

S.—Teaspoonful four times daily. Some modifica-

tion of this formula will usually give results. Ready-made prescriptions are as a rule not so satisfactory as those remedies directed toward the patient's individual needs.

Psychotherapy and suggestion are of great importance, but on no subject would it be more difficult to point out the manner in which it should be applied without first knowing the patient thoroughly as to etiology and environment. The psychic forces may work wonders if we can only turn them in the right direction. This we know from the fact that a pommeling and vertebrae-twisting by an osteopath and the preying and prayers of a christian scientist have each performed alleged cures in this disease.

THE RATIONAL (NON-OPERATIVE) TREATMENT OF SUPERFICIAL CANCER.

BY C. C. MAPES, COVINGTON, KY.

THE superscription selected for this contribution may seem inappropriate and objectionable upon the hypothesis that the "rational" treatment of cancer in any situation consists of ultra-radical surgery; but has the truth of such contention been clearly demonstrated? The writer is not unmindful that the consensus of surgical opinion is that so soon as the diagnosis of cancer is made, radical surgical removal is imperatively demanded to conserve the life of the patient; but has it been conclusively proven that the invocation of radical surgery has markedly prolonged the existence of cancer patients? *Per contra*, especially when dealing with superficial cancer, has it not been shown that more advantageous intrinsic as well as cosmetic results have followed intelligent application of methods other than radical surgical intervention?

Since this dissertation is intended to deal with the treatment of but one so-called variety of cancer, viz: superficial epithelioma, discussion of the pathogenesis, the histology, topography, symptomatology or natural history of malignant disease in general would be distinctly out of place. However, it may be permissible to state that according to medical literature, cancer was undoubtedly recognized, and to some extent satisfactorily treated, about five centuries before the advent of Hippocrates, though the different so-called varieties were not accurately classified and minutely described until within more recent years. Many ingenious and fanciful theories have been promulgated at different periods to explain the causation of cancer, "but the mystery of its origin has yet been unsolved, resistance to its progress has yet proved unsuccessful, and the symbolic crab continues to sink its claws slowly but relentlessly into the flesh of its victims." And "upon the shoulders of those who regard this disease as due to a protozoon or animal organism, still rests the burden of proof."

It appears true that knowledge concerning the nature and treatment of cancer has not progressed *pari passu* with that of other surgical diseases, and that for the most part when confronted with this disease the modern disciple of Aesculapius is equally as helpless as was his ancient brother, who frankly admitted his utter inability to successfully cope with the protean manifestations of this hydra-headed monster. Nor can any adequate suggestion be offered to indicate

why, in one instance, recurrence promptly takes place after radical surgical removal of a palpably malignant growth; and in another, why the disease does not recur after incomplete extirpation—unless, perchance, the explanation be found in gross diagnostic error, which the modern ultra-scientific surgeon and pathologist are quite unwilling to admit! Nevertheless, such are the facts as repeatedly observed by every physician of even ordinary experience.

There exists great divergence of opinion as to what constitutes the most appropriate non-operative treatment of superficial cancer, i. e., epithelioma involving cutaneous and muco-cutaneous structures. There are three methods more or less commonly employed, all of which have earnest advocates, viz: (1) electro-cauterization, (2) exposure to the X-rays, and (3) application of caustics. It is unquestioned that satisfactory cures have been effected by each of these plans of treatment, and in consequence all doubtless have distinct indications; but their limitations and contraindications must likewise not be overlooked or underestimated.

As in this contribution it would be impossible to review *in extenso* more than one method of treatment, the writer selects that to which he believes preference should be accorded as being applicable to the greatest number of cases, to wit: the application of caustics, leaving other procedures for consideration *dextro tempore*.

From available medical literature it is quite impracticable to determine with any degree of certainty when and by whom caustics were first used in the treatment of cancer, since this method seems to have been originally instituted without the sanction of medical authority. And it may be remarked, *en passant*, that this is not the only medical suggestion of inestimable value for which credit is due the charlatan, many of the drugs and methods of treatment in common use to-day having been first proposed by those unauthorized and unrecognized as legitimate practitioners of medicine.

Previous to 1800 caustics were used by Rush (1), of Philadelphia, in the treatment of cancer, and excerpts from some of his observations may not be uninteresting: A few years ago a certain Doctor Hugh Martin advertised to cure cancers by local application of a medicine which he claimed to have discovered in the woods. As he had once been my pupil, I felt at liberty to question him respecting his discovery. His answers were calculated to make me believe his medicine was of vegetable nature, and that it was originally an Indian remedy. He showed me a sample thereof which appeared to be the powder of some well-dried root. Anxious to witness the success of the remedy in cancerous sores, I prevailed upon him to admit me to see it applied in two or three cases. I observed that in some instances he applied a powder and in others only touched the affected parts with a feather dipped in liquid which had a white sediment, and which he claimed was the vegetable root diffused in water. It gave me great pleasure to witness the efficacy of his applications. In several cancerous ulcers the cures performed were complete; but where the cancers were much connected with the lymphatic system, or accompanied with a scrophulous habit of body, his medicine always failed, and in some instances did evident mischief.

Anxious to find a remedy that promised relief in even a few cases of cancer, and supposing all caustic vegetables were nearly alike, I applied phytolacca or poke-root, stramonium, aurum, and one or two others, to foul ulcers in hopes of seeing the same effects from them which had been witnessed from Doctor Martin's powder; but I was disappointed. They gave some pain, but performed no cures. Later I was furnished with a powder which I had no doubt from a variety of circumstances was of the same kind as that used by Doctor Martin. I applied it to a fungous ulcer, but without producing the degree of pain, inflammation and discharge which I had been accustomed to see from the application of Doctor Martin's powder. After this I should have suspected that his powder was not a simple root, had not the doctor continued upon all occasions to assure me that it was wholly a vegetable preparation.

Early in 1784 Doctor Martin died, and it was generally believed his medicine died with him, but a few weeks afterward I procured (from one of his administrators) a few ounces of the powder, partly with view of applying it to a cancerous sore which then offered, and partly with view of examining it more minutely than I had been able to do during the doctor's life. Upon throwing the powder (which was of brown color) upon a piece of white paper, I perceived distinctly a number of white particles scattered through it. I suspected at first that they were corrosive sublimate, but the usual tests of that metallic salt soon convinced me that I was mistaken. Recollecting that arsenic was the basis of most of the celebrated cancer powders that have been used in the world, I had recourse to the tests for its detection. Upon sprinkling a small quantity upon coals of fire, it emitted the garlic smell so perceptibly as to be recognized by several persons present who knew nothing of the object of my inquiries. Afterward I picked out three or four grains of the white powder and bound them between two pieces of copper which I threw into the fire. After the copper became red hot I took them out of the fire and when they had cooled discovered an evident whiteness imparted to them. One of the pieces looked like dull silver. These two tests have generally been thought sufficient to distinguish the presence of arsenic in any bodies; but I made use of a third, which has lately been communicated to the world by Mr. Bergman, and which is supposed to be infallible in all cases. I infused a small quantity of the powder in a solution of a vegetable alkali in water for a few hours, and then poured it upon a solution of blue vitriol in water. The color of the vitriol was immediately changed to a beautiful green, and afterward precipitated.

Rush concludes: The use of caustics in cancers and foul ulcers is very ancient and universal; but I believe arsenic the most efficacious of any that has ever been used. It is the basis of Plunket's and probably of Guy's well-known cancer powders. The great art of applying it successfully is to dilute and mix it in such a manner as to mitigate the violence of its action. Doctor Martin's composition was happily calculated for this purpose. It gave less pain than the common lunar caustic; it excited moderate inflammation which separated the morbid from the sound parts and promoted a plentiful afflux of humors to the sore during

its application; it seldom produced an eschar; it insinuated itself into the deepest recesses of the cancers, and frequently separated those fibres in an unbroken state which are generally called the roots of the cancer. On this account in some ulcerated cancers it is to be preferred to the knife. It has no action upon sound skin. In those cases where Doctor Martin used it to extract cancerous or schirrous tumors, that were not ulcerated, I have reason to believe he always broke the skin with Spanish flies.

The arsenic used by Doctor Martin was pure white arsenic. I should suppose from the examination made of the powder with the eye that the proportion of arsenic to the vegetable powder could not be more than one-fortieth part of the whole compound. I have reason to think the Doctor employed different vegetable substances at different times. The vegetable matter with which the arsenic was combined in the powder which was used in my experiments was probably nothing more than the powder of the root and berries of the solanum lethale, or deadly nightshade. As the principal, and perhaps the only, design of the vegetable addition was to blunt the activity of the arsenic, I should suppose that the same proportion of common wheat flour would answer nearly the same purpose. In cases where the Doctor applied a feather dipped in liquid to the sore of his patient, I have no doubt his phial contained nothing but a weak solution of arsenic in water. This is no new method of applying arsenic to foul ulcers. Doctor Way, of Wilmington, has spoken in the highest terms of a wash for foulness on the skin, as well as old ulcers, prepared by boiling an ounce of white arsenic in two quarts of water to three pints, and applying it once or twice a day.

As mentioned formerly, Doctor Martin was often unsuccessful in the application of his powder. This was occasioned by his using it indiscriminately in all cases. In schirrous and cancerous tumors the knife should always be preferred to the caustic. In cancerous ulcers attended with a scrophulous or bad habit of body, such particularly as have their seat in the neck, in the breasts of females, and in the axillary glands, it can only protract the patient's misery. Most of the cancerous sores cured by Doctor Martin were seated on the nose, the cheeks, or upon the surface or extremities of the body. It remains yet to discover a cure for cancers that taint the fluids, or infect the whole lymphatic system. This cure, I apprehend, must be sought for in diet, or in the long continued use of some internal medicine.

As cancerous tumors and sores are often neglected, or treated improperly by injudicious people, from an apprehension that they are incurable (to which the frequent advice of physicians "to let them alone" has no doubt contributed), perhaps the introduction of arsenic into regular practice as a remedy for cancers, may invite to a more early application to physicians, and thereby prevent the deplorable cases that have been mentioned, which are often rendered so by delay or unskillful management.

It is not in cancerous sores only that Doctor Martin's powder has been found effective: In sores of all kinds, and from a variety of causes, where they have been attended with fungous flesh, or callous edges, I have used the Doctor's powder with advantage (Rush).

A few years later Thomas (2) said: Applications of a caustic nature have been much used in the ulcerated

stage of cancer, and they have been employed under a variety of forms; but their principal ingredients are well known to be either arsenic or the oxy muriate of mercury. The most noted are, the Arundel powder, Guy's powder, and Plunket's powder, the last of which is a composition of crow's foot, dog's fennel, and arsenic:

R Ranunculi Acris Fol.
 Flammulae Vulg. Fol. aa.....oz. 1
 Arsenic Alb. Lævigatdr. 1
 Sulphuris Lotisc. v
 M. Sig. Apply locally.

It is prepared and applied as follows: the crow's foot and dog's fennel being fresh gathered and bruised, the other ingredients are added, and the whole beaten into a paste; this is formed into balls and dried in the sun. When used they are to be powdered, mixed with the yolk of an egg, and applied on a piece of pig's bladder to the surface of the cancer. In this state the caustic is to remain until the eschar has separated spontaneously.

A caustic composed of one ounce of powdered antimony, and half an ounce of powdered arsenic, fluxed together in a crucible and afterward reduced to powder, has been extensively used in the treatment of cancers, and often with most happy effect. By the addition of powdered opium, this remedy may be reduced to any degree of mildness. Equal parts of white arsenic and sulphur form a caustic application that is very powerful.

The paste arsenicale is a favorite application of many of the most eminent French surgeons in cancerous affections. This is composed of seventy parts of cinnabar, twenty-two of sanguis draconis, and eight of the oxyd of arsenic, which are made into a powder, and formed into a paste with saliva at the time of applying it.

A good method of using arsenic is by mixing about two or three grains of it with a drachm of pulvis calamine, and strewing a little of the powder on the cancer every day until the whole is destroyed and sloughs off.

Whenever caustic is applied, it will be necessary to give considerable doses of opium to allay the irritation and pain it occasions; and we should use also anodyne fomentations, composed of a decoction of bruised poppy heads.

Arsenic seems to possess in cancer powers which are peculiar and distinct from those of other caustics. If applied to the skin it will not affect it; but if this is abraded, it will produce an eschar to a certain degree, but it will be superficial. When continued for any length of time, the eschar will not be increased, yet the parts beneath the eschar will be found sloughed to a degree and extent proportionable to the strength in which the mineral has been applied; in short, to accomplish this end by the application of arsenic, it is not necessary that it should be in contact with the whole of the part it is intended to destroy (Thomas).

The writer's principal object in interpolating these observations, by two of the most prominent older authors, is to emphasize the fact that, barring possible improvements in formulæ and technique, there is nothing new or original in the modern treatment of cancer by application of caustics. Indeed, as indicated

by the foregoing abstracts, caustics were employed many years before the time of Rush and Thomas; and notwithstanding probable crudeness of formulæ and inferiority of technique, as compared with the present, it is not unreasonable to assume that the ultimate results were practically as favorable then as now.

Goodman (3) finds phytolacca decandra a most valuable remedy for epithelioma. He bruises the green leaves to a pulp, expresses the juice, which is evaporated to a thick paste, spreads on a piece of cloth and applies; it is removed and reapplied twice daily until the morbid growth is destroyed. Large epitheliomata can thus be destroyed in a few weeks, nothing but a faint scar remaining; the remedy is safe, can be used fearlessly, and in no case, says the author, is there a recurrence.

Bloom (4) prefers lactic acid paste (composed of silicic acid and lactic acid fifty to sixty per cent. strength) as originally suggested by Mosetig von Moorhof, who claimed it was superior to other preparations recommended for local application in the treatment of epithelioma, inasmuch as it would attack and destroy cancerous tissue but exerted no influence whatsoever upon surrounding healthy tissues, whereas other caustics attack diseased and healthy tissue alike. In preparing the paste take enough silicic acid to make a quantity sufficient for one application; put this upon a glass or mortar and add lactic acid drop by drop until when thoroughly mixed the paste is of such consistency as to readily adhere to the affected surface, depending somewhat upon the location of the growth. Applications are made twice daily the first week and once a day thereafter. Results from this method are said to be prompt and uniformly satisfactory. The author believes lactic acid the best caustic we have for treatment of epithelioma upon the superficies of the body, and his experience confirms the statements of Moorhof.

Cantrell (5) applies caustic potash in stick form in preference to any other treatment. If the parts are decidedly raised he uses the dermal curette before cauterizing. Finally some antiseptic dressing is applied, preferably carbolyzed olive oil which must be kept in continuous contact until the parts are healed.

Wyeth (6) is an enthusiastic advocate of Marsden's paste composed of two drachms of arsenious acid, eighteen grains cocaine muriate, and one drachm of powdered gum arabic, sufficient water being added to make a paste when ready to apply. It should be the consistence of rich cream, applied on a small piece of cloth, and left intact from eighteen to thirty-six hours—repeated, if necessary.

An efficacious cancer paste is said by a prominent editorial writer (7) to be the following:

R Wheat flour 1 oz.
 Starch 1 oz.
 Arsenious acid 8 grs.
 Red sulphurette of mercury.....20 grs.
 Ammonia muriate20 grs.
 Corrosive sublimate 4 grs.
 Zinc chloride 1 oz.
 Hot water12 drs.

M. ft. paste. Sig. Apply locally.

Among the numerous remedies recommended for treatment of cancer (8), arsenic is certainly one of the most ancient. It has been tried internally, and

as a local application; but even the temporary improvement occasionally observed by Billroth has not been obtained by other equally trustworthy observers. However, Czerny and Trunczek, of Prague, have adduced results which appear to merit attention. Their first attempts with arsenic in powder proved abortive, the thick scab which immediately formed effectually preventing any further action on the diseased tissues. They ultimately decided to make use of a solution of arsenious acid in equal parts of rectified spirit and water, of the strength of one part of the acid in 150 of the menstruum. Thus far their observations have borne exclusively on ulcerated superficial growths, the histological structure whereof could be demonstrated by microscopical examination.

The first step is to thoroughly cleanse the sore by vigorously rubbing or scraping the raw surface. The effusion of a moderate quantity of blood is a desideratum, it being indispensable that the remedy should come in contact with the tissues in presence of freshly exuded blood. The surface of the ulcer is then thoroughly moistened with the solution (shaken up before using), and allowed to dry, preferably without dressing of any kind. Some pain usually follows the application, but not of intolerable severity. A scab forms, over which the solution is applied daily. By and by the margins of the scab tend to separate from the subjacent tissues, and the treatment is continued until the scab is only retained in place by a few loose adhesions. These are divided and the scab removed. A fresh application of the arsenical solution is made, and if, on the third day following, the resulting scab is thin, of a light yellow color, and easily detachable, it indicates that the tissues no longer comprise any trace of cancerous growth. If, on the other hand, a dark colored, firm, and closely adherent scab again forms, the whole treatment must be repeated. The thicker the resulting scab the more energetic should be the treatment—that is to say, the stronger should be the solution, the strength of which may then be increased from one in 150 to one in 100, or even one in 80. When the desired result has been attained, there remains a granulating wound covered with a delicate white pellicle, to be dealt with on general principles. The formation of cicatricial tissue may be minimized by the application of boracic acid ointment along the margins of the ulcerated surface. The duration of the treatment varies from three to four weeks to as many months, according to the depth and extent of the lesion.

The procedure described appears to be especially applicable in cases of cancer of the skin not associated with glandular enlargement, and perhaps also in cancer of the tongue, in which the prognosis is so unfavorable and surgical treatment so unsatisfactory. The authors believe that the effect of the treatment is in part due to the alcohol, and they attach special importance to the presence of fresh blood on the ulcerated surface when making the first application. The remedy is a simple one, and admits of ready trial.

Krainski (9) records four cases of malignant disease of the eyelids and face in which he employed the celandine treatment. In two of the cases the neoplasms completely disappeared. In the other two there was distinct improvement, but as the cases could not be followed, the ultimate results cannot be stated. The

time required for destruction of the tumor was not more than two weeks. Several injections were made in the sound tissue bordering on the neoplasm. They were composed of equal parts of extract of chelidonium, sterilized water, and glycerin, four to eight minims of the mixture being introduced at a time. In addition to these a fifty per cent. solution of the extract in glycerin was applied externally twice a day and a dressing put on. The celandine did not affect the healthy tissues and was well tolerated by the conjunctiva. There was some pain for a few hours, and in two cases pyrexia. There was also considerable swelling around the tumor, and in one case suppuration at site of the punctures.

Among the arsenical pastes, Gottheil (10) mentions those of Cosme, Esmarch, and Bougard. Cosme's paste, as modified by Hebra, consists of:

℞ Acid. arsenosi 1 part
Hydrarg. sulphuret. rub. 5 parts
Ungt. aqua rosæ 40 parts

It is applied like that of Marsden, but, being weaker, should be removed every twenty-four hours, the parts washed, and the paste reapplied. This formula is not as desirable as that of Marsden. Its weakness Order 591 M T Galley 35 causes danger of its absorption, and it does not produce the requisite inflammatory reaction.

Esmarch recommends:

℞ Acid. arsenosi 1 part
Morph. sulphat 1 part
Calomel 8 parts
Pulv. acaciæ 48 parts

This is open to the same objections as the formula of Cosme, and is but little used in this country.

Bougard's paste is active enough, but it must be used with caution, as it is liable to destroy the healthy as well as the pathological tissue. Its formula is:

℞ Hydrarg. chlor. corros 1 part
Acid. arsenosi 2 parts
Hydrarg. sulphuret. rubr.,
Ammon. chloridi, aa 10 parts
Farini trit.,
Amyli,
Zinci chlorid. cryst., aa 120 parts

The various ingredients to be powdered separately, mixed in a mortar, and poured into the solution of chloride of zinc with rapid stirring to prevent lumping. The paste is applied on a cloth immediately after the preliminary curetting, and is allowed to remain on for twenty-four hours. The poulticing and after-treatment is similar to that after Marsden's paste.

Hue has used arsenious acid hypodermically, employing the following formula:

℞ Acid. arsenosi 1 part
Cocain. hydrochlor 5 parts
Aque destil. bulliens 500 parts

Several cubic centimeters are injected every three or four days into the cancerous tissue; it is claimed that the operation is not painful. Though his recoveries were only called "relative" and his cases all inoperable ones, the hypodermic injection of arsenious acid may be found useful in cases of cancer situated upon the mucous surfaces or in localities where the applications above-mentioned cannot be used.

Gottheil concludes: Cutaneous carcinoma is preferably treated, in the great majority of cases, by caus-

tics, which give the best results with the least liability to return:

Excision is to be reserved for those exceptional cases in which from location or extent, the caustic treatment is inapplicable:

Arsenious acid is the safest, surest and best of the caustics at our disposal, and seems to have a specific selective action upon the cells of the new growth. Pyrogallol may be employed in the most superficial cases:

In cancer involving the skin alone, arsenic should be used, after curetting, in the form of Marsden's paste:

Where the mucosæ are also or solely affected, arsenic can be used by the method of interstitial injection of Hue, or as a paint, as recommended by Czerny and Truneczek. The galvano-caustic point, the caustic potash stick, and the chloride of zinc may also be employed:

Cutaneous carcinoma, early and vigorously treated by the caustic method, is a very manageable disease, and of good prognosis.

Cantrell (11) claims that in the treatment of epithelioma arsenic has its greatest field of usefulness. This fact is made of great importance by the so-called "cancer doctors" who employ it in the treatment of this condition. Of the preparations usually advised there are a number of ointments which may have decided curative properties, but incessant pain is produced by the application and the cancer doctors state that "It is now drawing out the cancer." Marsden's paste is one of the best measures that may be adopted. If patients will endure the pain (and there are many who would rather do this than submit to a surgical operation) a cure may be expected, but it may be necessary to keep the application in contact for an indefinite period, or numerous delays in treatment may be occasioned by the excessive pain, thus prolonging the treatment over a considerable period.

Brown (12) reports favorable results from the use of a mixture of equal parts of collodion and zinc chloride in the treatment of superficial epitheliomatous growths. The application is renewed every second day, and at each renewal the former application is removed with ether; each dressing is followed by separation of a superficial slough, and the denuded surface heals under a boric acid dressing.

Ravogli (13) claims that formaldehyde in superficial cancer is one of the best local applications. It is non-poisonous, therefore there is no danger as in the application of arsenic paste. It has the power of penetration, therefore an action which spreads deep into the tissues, destroying the cancerous infiltrations. The deep-seated nodular carcinoma of the skin has also been treated by bathing with a four to six per cent. formaldehyde solution, with much benefit. Curettage, used a great deal by Kaposi, and also by Besnier, is a good method for superficial epithelioma, if followed by cauterization, even with the thermo-cautery, or with formaldehyde. The curettage removes the cancerous tissues on the surface, but does not remove the whole affected mass. Many nests of cells remain in the surrounding derma which the curette cannot reach; in consequence, relapse is prompt; but when curettage is followed by thorough cauterization, then it is one of the best therapeutic means at our command.

Truneczek (14) warmly commends arsenic as the medicament of choice in the treatment of epithelial cancer, when the latter is still strictly local and has not involved the neighboring lymphatic glands, and when it is accessible from without and the arsenic can be so applied that it is not absorbed. This treatment is advised for cancers of the breast in their early stages. When the drug is applied to non-cancerous regions or areas, it excites no reaction, or at most a very trifling one. The medicament works most rapidly upon ulcerating lesions and on cancers of the embryonal type. Cancers of moderate dimensions are completely healed in three or four weeks. For the purpose of lessening the pain of the application, orthoform is mixed with the arsenic, the following prescription being used:

℞ Arsenious and orthoform, each 1 part
Absolute alcohol and distilled water,
each from 40 to 75 parts

This solution is painted over the cancerous surface and forms a black scab, which steadily grows under daily repeated applications. This scab is not formed in any other kind of lesion. The author holds that the cancerous cells are first deprived of water by the alcohol, and then their protoplasm is coagulated by the arsenic. Between the diseased area and the healthy tissue there is formed a line of ulcerations which suppurate until finally the entire epithelial infiltration is exfoliated.

According to Allen (15) in the ordinary form of epithelioma of the face in which the tendency is to spread horizontally, and to avoid the deeper tissues and lymph channels, it is well to begin by curetting the edge with a sharp spoon which prepares the way for application of the caustic. A paste is then made of arsenious acid and orthoform, mixed with sufficient water to give it the consistence of butter. This is packed into the wounds made by the curette, noting that it penetrates deeply beneath the skin, in case the latter is undermined. If the ulcer is not over an inch in diameter, this mixture may fill the entire space level with the skin. If there is no cavity, a thick layer of paste can be spread over the part to be destroyed. A thinner layer may be spread over the surrounding skin, some distance from the sore. Where the cancer is located near the eye, the lids are sealed with collodion and absorbent cotton. It is possible to destroy an epithelioma by the application of a caustic where the ulcer extends to the lid without damage to the eye. Orthoform lessens the pain, and it has only been recently proposed as an addition to arsenical pastes.

Heidingsfeld (16) uses arsenious acid mixed with equal parts of pulverized gum arabic to which sufficient water is added to make a thick paste, and enough cocaine crystals to alleviate painful reaction, as recommended by Marsden, Robinson, Gottheil, and Stelwagon. He finds it expedient to add 10 per cent. glycerine before adding water, which prevents the paste from becoming too dry, and therefore prolongs and intensifies its action; the reactionary pain is also diminished by the glycerine:

℞ Acid. arsenosi 5 parts
Pulv. gum acaciæ 5 parts
Cocain. mur. cryst. 2 parts
Glycerin 2 parts
Aq. s.

M. ft. paste. Sig. Apply locally.

The paste is applied directly to the ulcerated surface, after being uniformly spread on a piece of muslin or linen, which has previously been carefully adapted to the affected area. It dries in the course of five or ten minutes, and remains firmly adherent until its removal twelve, twenty-four, or thirty-six hours later is indicated by the pain, intensity of the reaction, or the degree of treatment required. The after-treatment consists in application of simple, soothing, antiphlogistic remedies, in the form of indifferent pastes—Wilson's ointment, etc.—combined with cold compresses saturated with the solution of alum acetate. He has not found it essential to prepare the surface by application of caustic potash, in stick or solution, green soap, etc., as recommended by numerous authors in order to cut down the epidermis and to remove scales, crusts, and keratoses, which can interfere by their presence with action of the arsenic.

From this he infers that arsenic possesses not only an elective action exerting its chief influence on the weaker and less stable pathological tissue, sparing the more resistant surrounding normal tissue, but also exerts a specific influence over the cancerous tissue whereby it inhibits growth and prevents its further spread and development without entailing its direct destruction.

Fordyce (17) holds that the malignancy of epithelial cancers depends rather upon their structure than their location. Circumscribed, non-infiltrating epitheliomas are readily cured by excision or caustics, and show little tendency to recur. On the other hand, chronic infiltrating rodent ulcers recur quite as often after excision as after the use of the curette and suitable caustics. Curettage alone without the subsequent use of active caustics, like arsenic and chloride of zinc, spreads the growth by opening the lymph vessels, and more readily permits absorption and dissemination of the cancer cells. Caustics destroy the cell growth which is beyond the reach of the curette, and if repeatedly used when the slightest recurrence shows itself, many infiltrating epitheliomas may be radically cured with less destruction of tissue than by the purely surgical methods.

Marple (18) cites a case of epithelioma of the eyelid in which a cure was obtained by use of solution adrenalin chloride. The growth (of six years duration) was situated on the left lower eyelid, and its removal had been advised. The tumor was incised and a small specimen subjected to microscopical examination and its true nature revealed. Solution adrenalin chloride was prescribed, to be instilled into the eye every evening. The effect of the application was such that the condition became less irritable, and eventually disappeared entirely. The husband later advised that the medicine "had cured his wife entirely," which proved to be almost literally true. Along the margin of the lid previously occupied by the epithelioma there was found a clean indrawn cicatrix; the eyelashes were of course all gone. The patient reported that she had used the adrenalin solution regularly for three months, after that irregularly, finally ceasing altogether. At first small brown scabs or crusts formed upon the outer surface of the growth. These fell off spontaneously or with the least rubbing. As the crusts came away the mass became smaller, until it practically disappeared. During this

time adrenalin solution was absolutely the only remedy employed.

Robinson (19) declares that certain caustics judiciously chosen and properly used are, in the majority of cases of cutaneous cancer, far superior to the knife as a surgical measure, both as regards the complete removal of the disease and the subsequent deformity from the operation. He who sneers at the use of caustics has either had little experience in that direction, or the cases that have come under his observation have not been treated upon correct principles.

All caustics act as injuring agents upon the tissues, and the amount of injurious action depends upon the caustic employed, the strength of the agent, the duration of its action, and the vulnerability of the tissues acted upon; no caustic should be employed that does not, directly or indirectly, quickly destroy the morbid tissue. Some caustics destroy by chemical action, others by killing the vitality of the tissues; as the former destroys normal and pathological tissues about equally, it follows that the caustic which acts upon the vitality of the tissues is preferable if the law be true that pathological tissue is destroyed more quickly than the normal by such agents.

We will see from this standpoint that with our present knowledge arsenious acid is the agent that usually gives the best results, enabling the disease to be removed with the slightest amount of deformity from the operation.

The caustic agents which have most generally been employed in the treatment of cutaneous cancer are: nitrate of silver, nitric acid, sulphuric acid, hydrochloric acid, acid nitrate of mercury, arsenious acid, chloride of zinc, and caustic potash.

With these caustics, tissue can be destroyed to a greater or less extent, according to the agent employed. Some of them, such as nitrate of silver, act slowly and superficially, while others, such as caustic potash, act quickly and deeply; mild escharotics should not be employed. With nitrate of silver, for instance, only a portion of the tumor can be destroyed at one operation. As the tissue of the tumor area outside of the necrosed part soon recovers from the injury, a condition of reaction after injury occurs. There is more blood in the part and the lymph channels are enlarged; that is, the condition is favorable for increased proliferation of the epithelial cells and their further invasion of the tissues. The same reasoning holds true of all the mild caustics. Such treatment leaves the patient in worse condition than if no treatment had been employed. The three strong escharotics (chloride of zinc, caustic potash, and arsenious acid) differ in their action; but with any one of them all of the pathological tissue can be destroyed.

Chloride of zinc alone or in combination, as in Bougard's paste, has considerable diffusive power and great affinity for the water of the tissues, thus in short time producing a dry necrosis of considerable extent. The greater part of the necrosed tissue can be removed with the scalpel the following day, a new application of paste made, and the treatment continued until all the tissue has been acted upon and necrosed.

The disadvantage of this caustic is that it destroys normal tissue almost as quickly as the pathological, and on this account in tumors of considerable extent should only be used to destroy the main mass of the cancer, and its use be followed by other agents.

Caustic potash has great diffusive power, has strong affinity for water of the tissues, and produces rapid necrosis with liquefaction of the tissues acted upon. The necrosed tissue is permeable, so that action of the caustic continues for some time after application has been made. This prolonged action must always be taken into consideration. The rapid liquefaction of the tissue enables the operator to easily remove the softened necrosed mass and continue use of the potash until required action is obtained for complete removal of the tissue. As a result of the use of caustic potash the tissues in the immediate neighborhood become rapidly infiltrated with serum and the lymph channels become greatly dilated.

For years Hammond (20) has employed the following method: The field of operation is rendered aseptic; a sharp curette is used to remove all diseased tissue; c. p. nitric acid is then thoroughly applied by means of a cotton applicator over the entire surface from which the diseased tissue has been removed. Care should be taken to include the cutaneous edges. A plain sterile dry dressing is then applied, and if the area is small, such as on the eyelid or nose, it is held in place by flexible collodion. If of any considerable size, a roller bandage is employed to hold the dressing in position. The first dressing is left undisturbed for seven days, by which time the slough caused by the cauterization will have loosened, and it may then be washed away with bichloride solution, and the entire surface again touched, as at first, with nitric acid, and another dressing applied for the same period. When this second slough has come away healthy granulations will be found to have filled the base of the ulcer. Subsequent treatment consists in cleansing and dressing once daily with sulphate of zinc ointment, U.S.P. Of fifteen cases treated in this way, for the superficial form of cancer, some of which are now of more than six years' known standing, none have shown recurrence.

Mahu (21) obtained distinct results in the treatment of ulcerating epitheliomas by simple application of bandages saturated with adrenalin chloride. It lessened the hemorrhage, relieved pain, and there followed a rapid improvement in the general health. He is not prepared to state that this substance will cure cancer, but it appeared to arrest the progress of certain growths for a considerable time. He reports in detail the case histories of three cachectic patients, in whom the local and general condition was favorably modified by the treatment mentioned.

The conclusions of Allen (22) represent the position that seems rational, and summarize our present knowledge of the subject:

- (1) Cutaneous cancer is traceable, in almost all cases, to preceding local irritation;
- (2) There may be other causes, but infection is probably a source of the disease;
- (3) Benign epitheliomatous proliferations may be infectious;
- (4) Cancer is curable, but if the disease is allowed to progress, the patient may not be;
- (5) Only the most radical treatment is to be tolerated;
- (6) Caustic paste, with subsequent caustic dressing, is radical and is often preferable to the knife;
- (7) The earlier cancer is treated the less likelihood there is of relapses or metastases;

(8) The X-ray bids fair to be as effective as caustics.

With this added strong authority for the use of caustics, it would seem that writers should refrain from referring to this method as one leaning toward charlatanism:

REFERENCES.

- (1) Benj. Rush, Rush's Works, published about 1800.
- (2) Thomas, Practice of Physic, 1825.
- (3) North Carolina Medical Journal, 1895.
- (4) Medical Age, 1895.
- (5) The Polyclinic, 1895.
- (6) The Atlanta Clinic, 1896.
- (7) Medical Age, 1897.
- (8) Medical Press and Circular, 1897.
- (9) The Lancet (London), 1898.
- (10) International Journal of Surgery, 1898.
- (11) Therapeutic Gazette, 1898.
- (12) Therapeutic Gazette, 1899.
- (13) Journal of the A. M. A., 1899.
- (14) Klin. Ther. Wochen., 1900.
- (15) New York Medical Journal, 1901.
- (16) Journal of the A. M. A., 1901.
- (17) Journal of Cutaneous and G. U. Dis., 1902.
- (18) Medical Record, 1902.
- (19) New York State Jul. of Medicine, 1902.
- (20) Therapeutic Gazette, 1903.
- (21) La Presse Medicale, 1903.
- (22) Medical Record, 1903.

REFRACTION FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.

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TIME was when the general practitioner referred to the ophthalmologist only cases of organic ocular disease or of defective vision. Of recent years it has become the custom to consult him in a much more extensive way; to have the eyes examined in kidney and brain disease, the field of vision taken in neurasthenia and hysteria, and especially to have the refraction measured for optical errors as the possible cause of headaches and other reflex symptoms. In a large number of cases the physician finds that his patient is already wearing glasses as the result of a previous consultation with some oculist or optician. He must therefore have some standard of his own for determining not only whether the eyes can be excluded as the cause of present symptoms, but also whether the previous examination was properly and finally made or not. This is sometimes difficult because one school of ophthalmologists teaches that accurate refraction without a cycloplegic is impossible, while another teaches that it is almost never necessary at all. Some physicians therefore think that the consultant who did not use "drops" in a given case necessarily bungled it, while others are equally certain that their patients have been submitted to the inconvenience of cycloplegia simply because the oculist lacked the skill to do good work without it. Patients are getting the same ideas. Now each method has certain advantages of its own and the physician should have an intelligent idea as to what constitutes competent work in a given case.

Refraction cases may be roughly divided into two great classes, those who consult the oculist because of defective vision alone and those who suffer from eyestrain, a loose term used to designate the effects, direct or indirect, of ocular fatigue whether due to

overwork or to an inability of the ocular muscles to compensate for optical defects. In the first class a cycloplegic is ordinarily not necessary and very often would be a positive disadvantage. In such cases, while we wish to know approximately the amount of error present, we endeavor to correct only so much of it as shall give the best possible vision without imposing an undue strain. Not infrequently as in the case of the surveyor or sharpshooter, we prescribe glasses which considerably overstrain the eyes for short periods of time. If a cyclopleg is used, in such cases besides inconveniencing the patient, we either have to make another examination later on or prescribe glasses which may not give the maximum vision at all when the cycloplegia has passed off. Neither is it necessary to secure accuracy, for we have at our command other means of measuring with sufficient accuracy an error which we have no intention of correcting in full. The same reasoning applies to presbyopia when the term is used to mean simply the inability to see well close at hand as the result of old age. In the beginning of presbyopia between the ages of forty and forty-five, especially when complicated with astigmatism there are many exceptions.

But there is a large class of patients who consult us not because they cannot see well, for they often have the keenest of vision, but because they cannot see easily. This ocular fatigue is a varying quantity. In one individual it is only manifest after protracted use of the eyes for close work and results merely in a sense of fatigue or of sleepiness; in another the most moderate use of the eyes causes severe and long continued headaches, while among the less common symptoms are nausea, dizziness, backache, palpitation, and indeed functional disorder of any of the organs. Among the nervous symptoms aside from headache are insomnia, neurasthenia, hysteria, and extreme mental depression. Such patients are often examined without a cycloplegic and doubtless many times with entire success but the chief object of examining the eyes is to determine definitely whether the symptoms really proceed from the eyes or from some other organ, and this can be done with certainty only by aid of a cycloplegic. A patient may have a marked astigmatism and yet her headaches be due to an endometritis. If however they disappear when the eyes are completely at rest under atropine it is only fair to assume that the eyes and not the uterus were the source of the trouble, and this effect ought to be maintained by suitable glasses. If however no cycloplegic was used and the symptoms persist, the eyes cannot be excluded because they have not been thoroughly examined, and we are no wiser than we were before. This is especially true of those patients who have a very low astigmatism, often not incompatible with the keenest of vision but clinically often productive of the most severe eyestrain. There are no objective tests known that are sufficiently accurate for these cases, and yet the relief afforded by a full atropine correction is often remarkable.

The same reasoning applies to the field of ophthalmology itself. Of recent years there has been an extensive study of the extrinsic ocular muscles, imbalance of which often produces serious reflex disturb-

ance. But if such cases are invariably examined under a cycloplegic it will be found that in many of them the imbalance is the result of the strain produced by refractive errors and disappears with their correction, while in others in which it persists it ceases to occasion discomfort. The man who makes a routine use of cycloplegics in such cases will have much less occasion to do operations on the muscles for heterophorias. In my judgment few cases even of actual squint, unless amblyopic in one eye, should be subjected to operation without long continued cycloplegia.

The physician must inquire what kind of a cycloplegic was used in the examination of his patient. We have two varieties, one, of which homatropin is the type, which attains its maximum effect in an hour or two and has passed away at the end of twenty-four; the other, of which atropin is the type, is much more powerful and puts the eyes at rest for many days. The first is the most popular for obvious reasons, and in suitable cases is all that we can desire. To judge from the stories of patients, which are of course not always reliable, it is a common practice to instill a drop or two of homatropin in the office and then examine the eyes in a half hour or so when the pupil is widely dilated but the accommodation only partly paralyzed. The publisher who printed on the record card intended for oculists the word "Psychoplegia" coined a more appropriate term than he knew for this condition. Properly used homatropin is a very useful cycloplegic, in many cases, however, atropin is much to be preferred, especially in children or adults who have a very active accommodation. It is the writer's custom to use it in a large number of serious cases of supposed eyestrain for the following reasons: it enables one to measure absolutely the error of refraction and, if the symptoms disappear during its use, it enables one to say with considerable certainty that the eyes were their cause; it gives the eyes a complete rest for several days, which is of itself a great gain, and it enables one, if he desires, to prescribe nearly a full correction of the refractive error, letting the patient become gradually accustomed to it as the cycloplegia wears off.

The common custom of waiting till the cycloplegia has passed off and then prescribing approximately half the total correction, because this is all the patient can wear with comfort at this time, is in many cases a serious error which certainly causes many therapeutic failures.

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Tuberculothrapy.—Dr. Forbes Ross (*N. Y. Med. Jour.*, Nov. 9, '07) proposes: "To deliberately and wilfully procure and use as an article of diet for tuberculous persons the raw flesh (beef) of animals known to be affected by tuberculosis; with the object of bringing about artificially that which I firmly believe occurs unobserved in nature and in actual daily life among healthy persons." Let us pause for a moment to condemn any such proposal in the most uncompromising way we are able, and then dismiss it absolutely and turn to matters more worthy serious consideration.

Pleurisy and Empyema.—Pleurisy occurs in conjunction with pneumonia, pulmonary infarcts, gangrene, abscess formation, glandular suppuration, vertebral or costal caries; it may be rheumatic or tubercular. In dry pleurisy a fibrous exudate forms upon the previously smooth surface; this is a very common association with tuberculosis. In the *exudative* form there is extravasation of a serous, albuminous, or sero-fibrinous, serocellular, purulent, hemorrhagic or putrid exudate, according to the nature of the causative agent. The physical signs of dry pleurisy are: distinct creaking friction sounds over the lower lobe, synchronous with the breathing, occurring in jerks, and palpable with the hand; there is no dullness. But when effusion has taken place there is intense dullness, with a sense of resistance and enfeebled breathing, frequently also neupitant rales from compression of the lung; subsequently there are no adventitious sounds. Vocal fremitus is diminished; egophony is present. Above the level of the fluid, especially in front, the percussion note is distinctly tympanic, because of the relaxation of the lung. In right sided effusion the liver is displaced downward and the heart toward the left; in left-sided effusion Traube's semilunar space is obliterated (the normal tympanic note being replaced by dullness) and the heart is displaced toward the right and upward. In the beginning the patient lies on the healthy side to avoid pain; later upon the diseased side to be able to breathe more freely with the unaffected side. The affected side may bulge and be behind the other in movement. The upper boundary of dullness is oblique from above and behind, downward and forward in consequence of the development of the fluid in the dorsal decubitus. In consequence of fibrinous adhesions no alteration in the level takes place with change of posture (in contrast with seropneumothorax); during the absorptive stage the level of the exudate regularly remains highest in the axilla declining anteriorly and posteriorly. The variety of pleurisy is determined by exploratory puncture, together with microscopic and bacteriological investigation. The overlying skin is most carefully cleansed and then washed with alcohol and 3 per cent. carbolic acid solution. In introducing the needle the resistance of the penetrated layers is noted (thick cicatrices, abscess membranes), the pleura cavity is entered by the seventh, eighth or ninth intercostal space. Should we not find fluid immediately we cautiously introduce the needle more deeply or we withdraw it slightly or we repuncture. The opening of the puncture is closed by adhesive plaster; and we take great care not to produce a pneumothorax by permitting the introduction of air. The indications for the puncture are: boardlike dullness, with a sense of resistance, especially over the lower portions of the chest; enfeebled breathing, with crepitant rales; abolished pectoral fremitus, with a tympanic note above the dullness; displacement of the liver and heart (if right sided); if left sided, displacement of the heart with obliteration of Traube's space (bounded above by the lower border of the left lung, on the right by liver dullness; below by the costal arch). The fluid may be: serous, light yellowish (pneumonia, sepsis, rheumatic or tuberculous); hemorrhagic (carcinoma or tuberculosis); purulent (empyema); putrid (gangrene, from intestinal perforation). By microscopic and bac-

teriological examination of exudate we may find carcinoma cells, tubercle bacilli, staphylo-strepto- and dispirococci, bacterium coli and actinomyces—fungus. (We must recall that the exudate in tuberculous pleurisy is usually sterile.) If the pleurisy has terminated the needle encounters only dense thickening and adhesions, as further evidenced by contraction and retraction of the corresponding portion of the chest. A sacculated exudate may, however, for a long time persist in the midst of such adhesions. Exudates are rich in albumen (coagulation on heating) and fibrin (spontaneous coagulation); their specific gravity is usually above 1.018. Transudates do not coagulate; at most they become slightly turbid when heated; their specific gravity is below 1.015.

Recovery takes place through absorption of the exudate and contraction, with thickening and induration on the affected side. If the level of the exudate reaches anteriorly to that of the second intercostal space or if there is dyspnoea and distress or if resorption has not taken place within three weeks, we operate, plunging the needle into the sixth or seventh interspace, evacuating by means of the Potain apparatus about a quart of fluid. We use also mustard-paper, moist packs, ice-bags, diuretics, antirheumatics and morphine, p. r. n. When there is empyema we must do a thoracotomy or we must resect a portion of a rib.

Skin Pigmentations, as especially differentiated from Addison's disease, are enumerated by Grunbaum ("Practitioner," Aug. '07). The pigmentation associated with pregnancy may be accompanied with vomiting and languor which might make definite diagnosis difficult. Increase of pigment occurs in advanced chronic phthisis and may here be due to the adrenals becoming involved; here it may be impossible to distinguish from the ordinary typical Addison's disease; but in most cases, without suprarenal destruction the pigmentation is much more uniform. In vagabond's disease the cause of irritation is quite manifest; the pigmentation fades on removal of the cause. Multiple neurofibromata (Von Recklinghausen's disease) presents very varying aspects, occasionally the pigmentation is marked, while the other skin alterations and the neurofibromata can only be detected upon minute examination. Hemochromatosis is rare; the pigmentation here is often, but not invariably, associated with glycosuria and cirrhosis of the liver. Goitre is usually associated with increasing sweating, and this may cause pigmentation through irritation. Pigmentation by arsenic simulates that of Addison's disease very closely; we have to consider the history carefully. Argyria presents a very different color from that in Addison's disease; the former is deeper, slate gray, and not brown. Melanasma due to melanotic sarcoma, is uniform; and generally a primary lesion can be found. Zeroderma pigmentosum (Kaposi's disease), in its typical form leads to the development of epitheliomata; but there seems to be a number of varieties of different malignancy. Grunbaum has seen so close a crop of freckles that a face of a dark-brown color seemed to indicate Addison's disease, while the oral pigmentation resembled that of melanotic sarcoma, being intensely black and very patchy.

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SCIENCE AND HALLUCINATION.

SCIENCE is certainly grounded upon demonstration; hallucination is sensory impression without external stimuli. Obviously the two entities are incompatible, and cannot in reason be interrelated. Yet it pains us to note that men of undoubted reputation as scientists are sometimes led by their inordinate enthusiasm or other unscientific attributes to claim discoveries which have no foundation in fact. An example to this effect is offered by the *Boston Medical and Surgical Journal* in its presentation of the history of the famous n-rays, which Blondlot of Nancy claimed in 1903 to have discovered; and for this the French Government gave him a gold medal. During the three years following 176 original papers were published concerning this "discovery." Charpentier and Becquerel backed up Blondlot who acted, of course, in entire good faith. But oddly enough the n-rays did not, like the Roentgen rays, affect either the spectroscope or photographic plates. Even the most enthusiastic had to admit they were rather baffling and elusive. Finally there were so many scoffers that the *Revue Scientifique* proposed the following very simple test: Several boxes of exactly similar appearance, some containing pieces of lead, others of tempered steel, should be sealed; and Blondlot or his assistants were to decide which of the boxes contained the active material. Blondlot refused this test on the ground that "the phenomena were far too delicate for such a trial." "Thus was the dispute transferred from the realm of fact to that of opinion, experimentation ceased, and so far as science is concerned the incident was closed." The account is here greatly condensed; but the whole reads like a history of the Mississippi scheme or of the Tulip Mania.

Then there are those Martian canals, which have from time to time been so succinctly described, nay

even photographed. But now comes along that iconoclastic Professor of Astronomy at Columbia, who disrespectfully declares that such canals could not possibly be seen by us, that they are delusions, having truly enough external stimuli, but being due to sensations perverted by the distorted imaginations of those who are over-eager to see canals. We take no side in this matter; we are not astronomers; there may really be, for all we know—or care, canals on Mars. But we cannot help feeling that the Columbian vandal who scouts the idea of them may be right.

To us as physicians the matter of deductions from incorrect or imaginary data takes on from time to time a very serious turn. As when recently a youthful and brilliant medical writer held out really exuberant hopes regarding the efficacy of a serum in the cure of cancer; it is pretty well agreed now that his conclusions are erroneous. Nevertheless they must have aroused many false hopes and must have engendered much bitter disappointment. Surely no one would be more pained than this writer, were he to have submitted to his attention such quack advertisements as: *Trypsin cures cancer in three weeks*. It is the duty of men trained in science to base nothing upon haphazard conjecture, emotionalism or auto-suggestions; the consequences may oftentimes be of the very gravest sort.

THE IRRESPONSIBLE PARANOID.

THREE men were recently shot in the Boston State House by a paranoiac who, at the request of his mother, had been released on parole from an asylum for the insane, after a three months' confinement. Now that the deed has been done it is on all hands realized that the man Steele, who did the shooting, should never have been left without the strictest surveillance. He was possessed of the delusion of persecution—a most dangerous form of that disease, which in this patient, who is 37 years of age, had long passed all possibility of cure. When the stage described by Regis as that of "delusive explication," which presently merges into that of "transformation of personality" has been entered, the sufferer becomes quite unaccountable for his acts.

The absolute necessity of confining these cases in a way to preclude the possibility of their injuring their fellows, seems not to be generally apparent to the laity. Such patients appear, except with regard to his purely functional but very grave disease, to be normal. At the worst they seem but harmless "cranks." They are in fact extraordinarily apt at dissimulation, frequently deceiving friends, attendants and even physicians. Their power of acute and log-

ical reasoning is likely to be wonderful—to the degree, indeed, of exciting the alienist's suspicions. The autobiography of a paranoiac, which Peterson reveals to us, is a beautifully written manuscript which, under the circumstances in which it was written, is an eerie example of forceful, cogent and coherent writing. The patient who wrote it was so dangerously insane that he was confined for most of his life to the asylum in which he wrote this valuable work. Peterson describes it as a graphic picture of the steady evolution of the malady—"a remarkable self-dissection of the soul's anatomy."

Paranoia is a chronic psychosis; its characteristics are a progressive and elaborate train of fixed delusions; there is no marked mental deterioration, rather the reverse, until late in the disease. Very fortunately it is uncommon. In the course of time these delusions become so strong and as pervasive as logical beliefs; and then they dominate the life and actuate the deeds of the paranoiac. When they become "systematized" they cannot be corrected by argument or experience; the patient cannot be cured of them. And when the delusions are of persecution he becomes as dangerous as any irresponsible agent can be. There is no record of recoveries in well-developed cases.

LORD KELVIN.

THIS great scientist began life with the unassuming name of William Thompson. He became Professor of Natural Philosophy in the University of Glasgow at twenty-two and for more than fifty years he dignified this honorable position. Like Delany, who was made editor of the "London Times," the greatest of British journals, at twenty-six, he was most modest yet never for a moment uncertain regarding his capacity for filling the position assigned him. It is indeed the British trait to accept responsibilities as a matter of course. "My God," said Delany, "they've made me editor." The idea really frightened him, as it well might have so young a man; yet never for a moment did it occur to him to refuse the place on the score of youth or inexperience.

Lord Kelvin realized the limitations of science; he grasped that, while science could know much, there was a realm of the unknowable which science had best not seek to enter. Do not think, he advised his students, that we are any nearer a solution of the origin of life, that we understand any better the first cause, just because Berthelet and others have managed synthetically to produce some vegetable and animal substances.

Like most profound natures his was a most modest one. At the "jubilee" which took place in his honor in 1896, and to which delegates gathered from nearly everywhere in the civilized world, he declared (in a spirit akin to Newton's, who likened his achievements to grains of sand on the shore of an ocean of knowledge) that "failure" was the only word which could fitly characterize the most strenuous of the efforts for the advancement of science which he had made perseveringly throughout his nearly three score years of activity. And he further declared: "I know no more of electrical or magnetic force or of the relation between ether, electricity and ponderable matter, of chemical affinity, than I knew and tried to teach to my students fifty years ago."

In addition to the routine work of his professorship which generally takes up all the time of teachers, he made a very special study of electricity. He was the first to measure accurately this force and to reduce the law which governs the speed of an electric signal. He presented a theory of the mechanical forces involved in laying a cable. He was retained by those enterprising men who made ocean telegraphy possible; and in their service invented a number of most important contrivances. He had humor, too, as the "New York Medical Journal" demonstrates: When Joule visited his workshop he noticed a large quantity of piano wire lying about and asked what it was for. "Sounding," answered Kelvin; "but what note," asked Joule. "O, the deep C." It is well observed to be a curious thing that Lord Kelvin should have passed away at this time, when the transatlantic "wireless" seems to be rendering the cable unnecessary.

CERVICAL TUBERCULOSIS.

IT is most painful reading—the account before us of the death at the Lake View Hospital in Chicago of a child of ten during an operation conducted by Dr. O. E. Wald. The bereaved father prosecuted and caused the arrest of Dr. Wald, alleging that the latter's knife slipped during operation, thus severing the jugular vein; further allegation was made that the doctor should not have operated, inasmuch as he had one eye bound up at the time.

Dr. Wald's rejoinder was that the child had throughout her life had tuberculous cervical glands. It was a "closed infection;" interiorly the lesion had involved the wall of the jugular vein. All the right cervical tissues were eroded; and he had to cut through this tissue to get at the gland. He had the tissue partially loosened and had carefully lifted the gland when a gush of blood came suddenly from underneath, "where there had been no cutting." He packed the wound,

dressed it and stimulated the little patient. Within an hour she died. Dr. Wald declared he could not state positively the cause of death; possibly some foreign body had got into the heart. He operated with one eye bandaged, as alleged, but he could see just as well with the other. A short time after he did a delicate appendicitis operation under the same conditions, and with excellent results. We are gratified that Dr. Wald secured affidavits supporting his statements from three responsible colleagues.

On a consideration of this case we most heartily sympathize both with the father who was evidently distracted to unreason; and for our colleague, who surely did the best that in him lay for the unfortunate child. No doubt upon mature reflection the parent will not hold the physician blameworthy. It is amazing indeed, to anyone who considers the matter, how rare is a fatal issue in the surgery of our time, when every day thousands of operations are done by humane, able and conscientious men.

THE QUALITIES OF BRAIN MATTER.

THE general belief has up to the present time, we believe, obtained that the excellence of the psychic machinery depends not upon the size of the brain, but upon the number and extent of its convolutions, especially in the cortex. But Dr. Spitzka, in his treatise on human brains, just issued by the American Philosophical Society in Philadelphia, bids us modify this belief very decidedly. He declares that it is the white matter of the corpus callosum which unites the cerebral hemispheres, and the fibres of which radiate so extensively, that determines the quality, the fineness and the usefulness of the brain. The last of these distinctions no one will doubt; for if the fibres of the callosum are degenerate, cerebral disease will be manifested whether or no the cortical cells be normal. Dr. Spitzka declares that idiocy and mental insufficiency have their seat in the disease, traumatism or imperfect development of the corpus callosum. He finds the brains of totally unskilled men to be lightest; those of mechanics, clerks, business men and teachers are slightly heavier. The greatest brain weights are among "the geniuses of the pencil, brush and sculptor's chisel, the mathematicians, scholars and statesmen." It seems that the configuration of the brain is determined according to the work it does, special types being produced in abstract thinkers, experimenters and artists. The civilized peoples have a slight increase in brain bulk over savage races; but this does not nearly account for the mental disparities. These are better explained in Dr. Spitzka's researches which show differences in structure and adaptation of parts.

URBAN AS COMPARED WITH RURAL HEALTH CONDITIONS.

THERE is some interest for us on this side of the pond in the recently published *Returns* of the Medical Officers and Inspectors of Nuisances in the Rural Districts of Each County in England and Wales*. The story seems *apropos* regarding these returns of the lady at the village tea who expatiated on the delights of drinking that delicious beverage brewed from the pure, crystal water of the rustic well! There presently appeared upon the scene an indiscreet agriculturist, who held up a dripping dead cat which had for some weeks been missing and which he had at last hauled up out of that same well. From these returns we should judge that sanitary conditions are really very bad indeed in many English rural districts; and that if such conditions were to exist in cities, the populations of the latter would certainly be decimated. And we are of the opinion that the like observations apply to sanitation, or lack of sanitation, in American country districts. We learn from these English reports that there are only four rural districts of which the Medical Officers of Health give their whole time to the duties of their office. One health inspector is a master-smith and a poultry fancier and dealer. Another, in a district of nearly 60,000 acres and having a population of over 14,000, is a veritable Pooh-Bah; he is Highway Surveyor, Inspector under the Petroleum Acts, Collector to the Board of Guardians, Vaccination Officer, Register of Births, Deaths and Marriages and Collector of Income Taxes. It would indeed not be surprising if an occasional unwholesome dwelling or a polluted well should escape the notice of such a busy man. With regard to our rural districts as well as those in England the observation of *The Practitioner* is pertinent; that a health officer, if he is to perform his duties satisfactorily, should be freed from the exacting and possibly conflicting duties of a private practice. He should also be quite independent of the favor or disfavor of local authorities, since his official duties might bring him into collision with those upon whose good will, in reference to private practice he is more or less dependent, or to whose favor he owes a precarious position.

Time was not so many years ago that with regard to healthful conditions *Rus* certainly had the advantage of *Urbis*. It used to be held that urban populations would die out within three generations, were they not constantly replenished from the rural stock. But modern sanitary science, "the babe in the family of sciences," is certainly changing all that. Municipal sanitation had its inception in Pasteur's work and in his declaration that it is within human power to banish all parasitic diseases from the face of the earth.

* *The Practitioner*, Dec., '07.

Since then wonders have been worked; we now know of frightful epidemics only in a historic way; pure food, good water and waste removal are things now managed on a gigantic scale, adequate to the needs of large cities; wholesome milk is being insisted on, and those who do not supply it are being penalized; compulsory registration and other important municipal measures are markedly decreasing tuberculosis in cities; tenement house departments are bringing about prodigious and most salutary reforms; there are huge systems of plumbing, and sewage facilities line and intersect every street; noxious trades are being eliminated and factory conditions are being made wholesome.

What is there to show for all this? The New York Vital Statistics for October, published by the State Department of Health at Albany, show an urban mortality of 16.9 per thousand as compared with the rural death rate of 15.9; but the city birth rate is 28, the rural 18, showing a net increase of population in the cities of 9 per thousand inhabitants. The birth rate for the twenty-eight incorporated cities of Massachusetts during the census years since 1870 has been 28.4 per thousand, as compared with 22 for the rural districts. It is indeed encouraging that of recent years the urban death rate has declined faster than the rural, although it is still somewhat in excess. Truth finally requires the statement that the country remains safer than the city for infancy and old age.

The Panic.—Quite a number of persons buying something they did not want and largely with money that they did not possess, hoping thus to get more money which they had not earned; the logical and proper consequence, loss of money and unfulfilled obligations; more or less reasonable fear as to the solvency of a bank; a run on the bank with its inevitable result, for no bank can withstand a run of any duration any more than an insurance company can pay its obligations if any considerable amount of them suddenly become due; a loss of confidence all over the country.

It is difficult for the man on a salary or in professional life to realize, if he is at all thrifty, the immediate and tremendous effect of loss of confidence in the business world. With few exceptions all large businesses are conducted on the hand-to-mouth plan. Sales are made on credit, the security is rushed to the bank and cash secured at a discount, excepting wages and a few comparatively minor expenses, purchases are made on time. Thus a chain of credit links various unrelated concerns together. A sudden forcing of claims, a reluctance on the part of the bank to supply ready money, any unforeseen failure of expectations anywhere along the chain, breaks it. Other chains extending in other directions may and usually do prevent a fall, but any considerable rupture allows a collapse of a considerable part of the business structure, not only of a locality but of the whole world.

The present panic has been particularly aggravat-

ing because of its essential needlessness. There has been no general failure of crops, no sudden destruction of property by fire, no political upheaval, no great strike, no general poverty, no important cessation of any lines of business, to account for it. There has not even been any actual shortage of cash, more than always occurs at this season of the year. In other words, the panic has been largely accidental, just such as may be expected at any time, with our present business methods, whenever any one brick in the row is upset and falls hard enough and in the right direction to set the others going. We need not discuss just how the panic affects the medical profession. It may be the failure of a dividend on what has been considered a safe investment, a loss of a personal bank deposit, but it is due more generally to a retrenchment by every large consumer on every item that can possibly be dispensed with, a discharge of thousands of laborers of various grades, all over the country, a hoarding of a few dollars here and there, amounting in the aggregate to millions, occasionally—and fortunately, only occasionally—an actual collapse of a business.

It is doubtless impossible for great businesses to be conducted on other than the credit system. It is by no means phenomenal for a single concern to have a payroll of ten to a hundred thousand dollars a week. There is only about thirty dollars actual currency for the average individual, and probably the average worker will earn this in less than three weeks. Thus it is obviously impossible except for a few individuals, to accumulate any cash surplus beyond their immediate needs. Inflation of the currency, or even the reserve of gold, if the latter were possible, would merely result in the further degradation of money or advance of prices for labor and commodities, whichever way we prefer to express the same fact.

But there is a moral, which applies both directly and indirectly to the medical profession. Gambling in the name of business must stop, or the results will be disastrous. It is only by accident or by shrewd manipulation that one can get something for nothing. An "investment" that is expected to increase 50 or 100 per cent, in a short time is pretty closely comparable to a long shot on a horse race. Success means either taurocephalic luck or special skill or influence that enables one to manipulate the investment. It stands to reason that the average, innocent and ignorant investor will not be taken into any scheme which is genuinely expected to yield such returns, for money can easily be obtained at not much over ordinary interest rates, if the outlook is favorable. Personal acquaintance with a promoter does not imply special influence to secure a good investment. Most promoters fall within one of two classes, they are either men who have decided to live by their wits, without performing hard or directly productive labor or they are men who have failed in other business. The former will not, the latter cannot, follow the generally accepted rule of business ethics to do strangers but not one's friends.

When the general public quits gambling in stocks and seeking quick-return investments and makes up its mind that the only sound investment is one to be held for a long period, for the sake of a steady and

humanly speaking, certain, dividend at ordinary interest rates, we shall have no more panics, although various causes may produce hard times and isolated failures.

Hospital Ship "Relief" to be Commanded by Medical Officer.—Admiral P. M. Rixey, Surgeon-General of the U. S. Navy, has issued a statement with regard to the controversy brought about by the decision to place the hospital ship "Relief" under the command of a surgeon. Various officers of the line have objected to this decision and the resignation of Admiral Brownson is an expression of indignation at this usurpation of the prestige of the navigating officers.

The medical profession will need no argument to convince them as to the wisdom of placing a medical man in charge of a floating hospital. The wonder is, not that the proposition meets with objection at the hands of officers of the line but that even Dr. Rixey's influence with the President has sufficed to bring the idea into serious consideration. It is, of course, argued that a surgeon is incompetent to direct the navigation of a ship. But, in the navy, as in every other organization of modern times, the day is past when the executive can even be presumed to understand, and if necessary, do the work of his subordinates. That this presumption might have been and often was correct in the days of sailing vessels, cannot be denied. At present, it is merely a thin fiction that the commander of a steamship, much less one requiring so elaborate and varied machinery as a naval vessel, can intelligently criticize the details of the work of his subordinate.

In the present instance, the important point is whether the navigating or the medical officer shall have the power to dictate to the other in the rare occasions in which a conflict might occur. Generally speaking, in both the army, the navy and in business organizations, there is more or less openly recognized the principle that while the chief must necessarily direct, in a general way, the activities of his subordinates, he must not exercise his authority so as to thwart the efforts of a subordinate more highly trained in certain technical details than himself. Thus, the decision between selecting the medical or the navigating officer as the chief, resolves itself into the question as to whether the main purpose of a hospital ship is to fight and navigate or to minister to the sick and wounded. We can conceive of only gross cowardice, drunkenness or other mental incapacity or a deliberate disposition to exercise authority in an unreasonable degree, as tending to make the control of a hospital ship by a surgeon undesirable. On the other hand, all of these causes are equally potential if the control is in the hands of a navigating officer. The general principles of navigating a ship, namely to pursue a course already provided for in a general way, and to exercise precautions against danger from the elements and from other vessels are so clear that it is scarcely conceivable that any sane man, physician or otherwise, would exercise his authority to thwart the efforts of his subordinate in carrying them out or that, in the event of an initial difference of opinion, he could not easily be convinced of the proper course. On the other hand, it is not only theoretically possible that one untrained in med-

ical and surgical matters might seriously handicap the functions of the medical officers on a hospital ship but it has repeatedly been demonstrated, both in the army and in the navy, that the supreme command of medical officers by laymen has resulted in increased incidence of disease and unnecessary mortality.

A further argument for the command of hospital ships by surgeons is one that would not occur to the average medical man, but which has been supplied by thoroughly competent and impartial authority, namely that the carrying out of the intention of international law and treaties to provide for the virtual neutrality and safety of hospitals, is best subserved by the proposed arrangement.

A new definition of life has lately been essayed by a French physician; this he has set forth in terms of disease, as follows:

First year, infantile complaints and vaccination; second year, teething, croup, infantile cholera and convulsions; third year, diphtheria, whooping cough, and bronchitis; fourth year, scarlatina and meningitis; fifth year, measles. By now half the children are dead. The others live on as follows: Seventh year, mumps; tenth year, typhoid; sixteenth year, chlorosis and spinal irritation; eighteenth year, neurasthenia; twentieth year, cephalalgia, alcoholism and vertigo; twenty-fifth year, marriage (considered, presumably, as a disease). In the twenty-sixth year, insomnia; thirtieth year, dyspepsia and nervous asthenia; thirty-fifth year, pneumonia; forty-fifth year, lumbago and failing sight; fifty-fifth year, rheumatism and baldness; sixtieth year, amnesia, loss of teeth, hardening of arteries; sixty-fifth year, apoplexy; seventieth year, amblyopia, deafness, general debility, loss of tone in the digestive organs, gouty rheumatism. For the seventy-fifth year he mercifully assigns death, a happy ending, indeed, for anyone whose life has fitted into this definition. The list here set forth deserves consideration, by the way, at the hands of those who believe that the practice of medicine is in danger of dying out for want of diseases to treat; it seems there are likely to be plenty of them left, even after the prophylaxis propaganda, which is now rather rife, has reached its limit.

"Physics" was the subject of a valuable lecture by Prof. Ernest F. Nichols, the second in a non-technical series dealing with science, philosophy and art which are being given every Wednesday during the college year by various members of the Columbia faculty in New York City. These lectures are open to the public, so that now the criticism is without weight—that situated upon Morningside Heights, in a position to look down upon and take part in the life of the metropolis, Columbia nevertheless interests herself austere only in her own affairs. Concerning physics, a science collateral to medicine. Prof. Nichols observes that the ideas underlying it are space, time and inertia. With space and time as a background, the physicist must pursue inertia and everything related to it along every conceivable path. In this pursuit he comes upon four ultimate though related conceptions—matter, ether, electricity and energy. An important part of our present knowledge of matter and nearly all that we know of electricity

and the ether has been gained, not directly, but by inference. In so many cases we see or know directly only the first and last link in a chain of events, and must search by indirect means for the mechanism lying between. Thus, from the point of view of abstract metaphysics the ether, electricity, force, energy, molecule, atom, electron are but the symbols of our groping thoughts created by an inborn necessity of the human mind, which strives to make all things reasonable. In reasoning from things seen and tangible to things unseen and intangible, the resources of mathematical analysis are applied to the mental images of the investigator, often suggested to him by his knowledge of the behavior of material bodies. This process leads first to a working hypothesis, which is then tested in all its conceivable consequences. Any unknown phenomena required for its fulfilment are sought in the laboratory. By this slow advance a working hypothesis which has satisfied all the demands put upon it, gradually becomes a theory which steadily gains in authority, as more new lines of evidence converge upon and confirm it. Concerning the present-day electron theory, Prof. Nichols eloquently observes: "Should it hold good, the atom with its revolving electrons becomes the epitome of the universe. The architecture of the solar system and of the atom, of the very great and the very small, reveals the same marvellous plan, the same exquisite workmanship. To end as we began, we have matter and electricity, which some day may be one, and ether and energy; of these we hope some time to build in theory a reasonable world to match the one we now so little understand. When all the inter-relations of matter, ether, electricity, are separated out and quantitatively expressed, we believe our work will be complete. Such, then, is the confession of faith, the very far distant hope of the modern physicist."

Heredity.—An excellent summary of what is known about the transmission of personal characteristics from parents to children is contributed to the last *Annual Report of the Smithsonian Institute* by Prof. L. Cuenor, who describes a series of experiments with animals, which have revealed precise laws. There is a definite proportion according to which is transmitted to the offspring a large lower jaw or lip, or a shortness of stature, or longevity, or certain diseases, or even mental traits. Darwin, Mendel, Galton and others have given us the basis of our knowledge. "Mendel's law" records that of two opposite species, children of the first generation, will combine their traits, and children of the second generation will be in the following proportion: one like the grandfather, two like the father and mother, and one like the grandmother. Similarly, a cross-breed, mated with a pure species, produces an equal number of cross-breeds and pure species. The cropping out of an ancestral trait long "hidden" is governed by laws as simple as those of chemistry. Applying these laws of heredity to man, for the sake of posterity, marriages should not occur between families with like apparent or latent defects, either physical or mental.

It's Worth More Than That, However.—A county supervisor recently considered one dollar and a half sufficient pay for an alienist who appeared in court as an expert witness.

BIBLIOGRAPHICAL

Atlas and Text-Book of Human Anatomy. By Dr. Johannes Sobotta, Professor of Anatomy in the University of Wurzburg, edited, with additions, by J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Toronto, etc. Volume iii., Vascular System, Lymphatic System, Nervous System and Sense Organs, with 297 illustrations, mostly in colors. Philadelphia and London, W. B. Saunders Company, 1907, large octavo, pp. 342. Price \$6.00.

The third and last volume of this superb atlas is before us, and it covers the remainder of the vascular system, and the entire nervous system, together with the organs of special sense.

It has taken long years of experience in the dissecting room to enable the author to depict the peripheral nerves and blood-vessels as the student will see them in the cadaver, that is, the vessels and nerves together in the same region.

This arrangement of the material has the advantage that the student can find upon a single page a majority of the structures found in a layer of his dissection with great saving of time.

A reproduction in colors became necessary by the simultaneous representation of the blood-vessels and nerves.

All the illustrations are from original drawings and show wonderful artistic talent as well as cleverness.

The author has aimed to produce a useful book for the medical student and the practitioner, rather than one for the finished anatomist, and his work has been perfectly accomplished.

Great credit is due the publishers for having made the publication possible.

Diseases of the Nose and Throat. By D. Braden Kyle, M.D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fourth edition, thoroughly revised and enlarged. Octavo volume of 725 pages, with 215 illustrations, 28 in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$4.00 net; Half Morocco, \$5.50 net.

This entire book has been revised and a large number of entirely new articles have been added by its eminent author, making it the most complete and up-to-date work of the kind in existence.

The author, as in previous editions, has aimed to take up each subject from a general standpoint and to consider under diagnosis, pathology, and treatment all systematic conditions in their relation to the special diseases under consideration, as the same general fundamental principles involved in general medicine are considered applicable to any specialty. Considerable space is given to the chemistry of the Saliva and Nasal Secretions, and its relation to diagnosis and treatment, and in full the etiology and pathology of the various diseases, so that by this detailed description treatment is indicated and easily directed. The text abounds in original illustrations.

The book is heartily commended to the student and to the general practitioner.

The Sexual Instinct, Its Use and Dangers as Affecting Heredity and Morals—Essentials to the Welfare of the Individual and the Future of the Race. By James Foster Scott, B.A. (Yale), M.D., C.M.

(Edinburgh), late Obstetrician to Columbia Hospital for Women and Lying-in-Asylum, Washington, D. C., etc. Second edition, revised and enlarged. New York: E. B. Treat & Company, 1908. Octavo, pp. 473. Price \$2.00.

The author has handled his important subject plainly and fearlessly, as it should be, regardless of false modesty.

No person can afford to be without the knowledge which this book imparts, regardless of whether he intends to rear a family or not.

It should be read by laymen as well as by physicians.

A thorough knowledge of matters pertaining to the sexual sphere, will promote pure living and happiness.

Physicians should prescribe the book to their patients.

The Elements of Homoeopathic Theory, Materia Medica, Practice and Pharmacy. Compiled and arranged from Homoeopathic Text-books by Dr. F. A. Boericke and E. P. Anshutz. Second revised edition. 218 pages. Cloth, \$1.00 net; postage 5 cents. Philadelphia: Boericke & Tafel, 1907.

There have been some additions made to this edition and the headings, some of them, have been changed to black letter type.

The book has been found useful to them for whom it was intended.

The Correction of Featural Imperfections. By Charles C. Miller, M.D. Including the description of a variety of operations for improving the appearance of the face. 136 pages. 73 illustrations. Prepaid \$1.50. Published by the Author, 70 State St., Chicago, Ill.

There is a demand for work of this character, and with a view of keeping it within the ranks of regular Surgeons, the author has published this little book.

Any one proposing to practice this specialty should have a copy of this volume.

The Every-Day Diseases of Children and Their Rational Treatment. By George H. Candler, M.D., 12mo. pp. 386. Price \$1.00.

This little book does not follow the beaten paths of tradition, its text is original, practical and pertinent.

Unfortunately the average practitioner when he emerges from college, unmarried, and unfamiliar with children and their peculiarities, has a difficult proposition to solve when called upon to take charge of little ones.

It is in the interest of the general practitioner that this book has been written, and we sincerely believe that it will be found of service to such.

The therapeutic measures advised are positive, rational and as far as possible individualized, and are not confined to drugs.

Get a copy of the book, it costs little, and see for yourself.

International Clinics. A Quarterly of illustrated clinical lectures and especially prepared original articles covering the whole field of medicine, by eminent authors. Edited by W. T. Longcope, M.D. Octavo, pp. 308. Seventeenth Series, vol. iv., 1907. Philadelphia and London: J. B. Lippincott Com-

pany.

This publication comes to us as usual filled to the brim with good things for the up-to-date practitioner.

We regret that our space will not permit of our presenting a list of its contents.

The articles "on the action of injections of fresh blood-serum in blood-states that give rise to hemorrhage" and the "Five years' experience with an anti-typhoid Serum", especially interested us. The author says, "that every one of my patients without an exception, treated by the serum during the first week, recovered." An important statement!

There is an article on "Thiosinamine in the treatment of deafness" which opens a new field of great promise.

Our advice to our readers is to obtain a copy of the book.

Medical Diagnosis. A Manual for Students and Practitioners. By Charles Lyman Green, M.D., Professor of the Theory and Practice of Medicine in the University of Minnesota, Attending Physician St. Luke's Hospital, The City Hospital and the St. Paul Free Dispensary, etc. Second edition, revised, with seven colored plates and 241 illustrations. Octavo, pp. 691. Price \$3.50. Philadelphia: P. Blakiston's Son & Co., 1907.

The first edition of this excellent little book met with a hearty reception, so that this revised edition appears within the short space of seven months, in which is incorporated a brief description of the Opsonic theory and technique.

It is a concise, practical and thoroughly modern hand book of convenient size and form, for the over-taxed student, and the general practitioner.

The book will continue to meet with approval.

A Text-Book of Minor Surgery. By Edward Milton Foote, A.M., M.D., Instructor in Surgery, College of Physicians and Surgeons (Columbia University), Lecturer on Surgery, New York Polyclinic Medical School; Visiting Surgeon, New York City Hospital, etc., formerly Chief in Surgery at the Vanderbilt Clinic. Illustrated by four hundred and seven engravings from original drawings and photographs. Octavo, pp. 752. Price, \$5.00.

Minor Surgery is the only field into which the average practitioner will ever enter, and it is the one in which most of the Surgery is found.

This book describes in detail the manifold lesser accidents and surgical diseases which the general practitioner is called upon to treat.

The author brings to his effort an immense experience, which he has presented in compact form, fully illustrated by photographs as far as possible.

We do not hesitate to commend this superb work, to any practitioner who may come in contact with surgical cases, as the text covers in a lucid manner, just what he requires.

Cart-Tail Anti-tuberculosis Propaganda. — The Kensington Tuberculosis Dispensary of Philadelphia and the Kensington branch of the Y. M. C. A. of that city, have hit upon a novel means of displaying an itinerant exhibition. A course of lectures is being delivered during the noon hour to the mill-workers in the northeastern districts of Philadelphia from a wagon fitted with suitable exhibits.

CORRESPONDENCE

STRYCHNINE; JUST A THOUGHT: "HEART DISEASE."

To the Editor of the MEDICAL TIMES:

This Christmas morning opens up very sadly for the Ball family and near relatives at Hopedale. The morning papers give us a lot of figures anent the prevalence of "heart disease", and an editorial on this subject gives some good advice as to the influence of overtaking the physical powers in the struggle for success in business, and of bad-and over-eating; and there is an item of news from Hopedale telling of the fatal poisoning of two-year-old Catherine Ball by Strychnine pills prescribed by the family doctor for her mother who is said to have heart disease. Her small daughter was killed by a "medicine" every little dose of which was a positive injury to the mother, bringing her a little nearer to her death from "heart disease", or, perhaps, some other disease resulting from the outrage inflicted upon the great central organ, the heart. Such accidents as this which caused the little girl's death are of quite frequent occurrence. One of these not long ago caused the death of two young children, while the invalid mother looked on, sitting helpless in her chair while her dear babes ate from her box of strychnine pills. Imagine the horror of it!

When that good time comes which Sir Frederick Treves, King Edward's physician, has recently predicted must some day come, when "the people will leave off the extraordinary habit of taking medicine when they are sick"—it has already arrived for some millions of well-informed human beings, thanks to the teachings of hygienic physicians, health magazines, such as "Physical Culture", "Health Culture", etc., etc., and, to be sure, to the "Mother Eddy" jollies—the doctor who should prescribe strychnine, digitalis, or other poisonous drugs, would be prosecuted for mal-practice, and, in case of a fatality, for manslaughter. Personally, I would as soon think of sending a lot of dynamite slugs or loaded pistols into any home as a box of strychnine pills. It is cheering to the heart of every student of this question to note the opinions of such men as Sir Frederick Treves, the late Sir Benjamin Ward Richardson, and the eminent Dr. Osler, Dr. Felix Oswald, and some others, frowning upon the prevalent practice of poisoning sick folk. Dr. Osler recently in addressing a class of medical students—just imagine the feelings of the poor lads engaged in cramming for a diploma, with medicine foremost in their minds as the means of "curing" their prospective patients—said: "The best doctor is he who has learned the worthlessness of medicine" (or "of most medicines," as one medical editor quoted it). When the good time comes in which physicians shall have reached the degree of intelligence moving them to employ the placebo for the minds of their patients, or such as need this influence, and to treat them otherwise by physiologic methods, as hydrotherapy, diet, massage, etc., etc., there will be little heard of "heart failure", and "heart disease" will no longer head the list of the causes of death. A patient of mine some years ago wired me in great distress from Newburyport that her 4-year-old daughter had gained access to her box of pills and had eaten a large number of them. I wired back,

"Give her the rest of the pills as an antidote and fear no danger"! Her dear babe's life was saved; but I am sure that she has never forgiven me the part I played, although she recovered her own health under the all-round advice I had already given her. She would never have employed me if I had undertaken her treatment without "medicine"!

The case of old King Oscar of Sweden was very interesting in several respects. From an account of his case, as given to the press, we note that "his illness was not considered dangerous". His people were unprepared therefore, for the bulletin issued the following day which stated that the King's condition was serious. "The King's attendants resorted to heroic measures to relieve him, and administered stimulants and restoratives up to the very last. Their efforts met with some measure of success (!) but each recurring relapse left the King weaker, and on Friday night he lapsed into unconsciousness at intervals. The physicians abandoned hope and devoted their efforts from that time on to prolonging life by artificial means."

Now, we know what is meant by stimulants and restoratives and what is called "heroic measures" and "prolonging life by artificial means". It is my belief based upon observations covering a quarter of a century of very busy practice, that in every such case the means resorted to for prolonging life tend inevitably to shorten it. If King Oscar could have had the benefit of a rational therapeutic fast, absolute freedom from stimulants and all medication, and could have had such hydrotherapeutic procedures as were indicated, including, perhaps, hot blanket fomentation along the spine, together with frequent moderate portions of moderately hot water, to maintain the fluidity of the blood—treatment along these natural lines, skilfully applied, would in all probability have enabled him to recover, and to live on comfortably for some years. And I would cite as proof of this, that he held out as long as he did against the death-dealing "heroic measures" to which he was forced to submit.

CHARLES E. PAGE, M.D.

Boston, Mass., Jan. 11, 1908.

INFLUENCE OF HIGH FREQUENCY CURRENTS IN RETARDING SENILITY WITH REMARKS ON A NEW APPARATUS.

To the Editor of THE MEDICAL TIMES:

A celebrated French clinician claims that a man is as old as his arteries. In other words, beginning arterio-sclerosis is the starting point of senescence irrespective of the number of years the patient may have lived. A man or a woman may be young in years but old in his or her arteries, hence the importance of avoiding conditions and habits of life, which are likely to produce a high blood pressure with hardening of the arteries. Senility is a natural process, and it should come on, gradually, and painlessly; however, owing to inheritance, or predisposition as well as the strenuous life we live in our struggle for existence, senescence creeps on us before we are aware of it. This is the time for the physician to exercise his functions, and protect his patient, before he is actually senile. When a man begins to get old much can be accomplished

by proper medical advice and treatment to retard the symptoms, which are an accompaniment of the inevitable decline in years.

It is admitted by many of our profession that arterio-sclerosis (with loss of elasticity in the walls of the arteries) is really the beginning of old age. The changes in the wall of the blood vessel are said to be due to hypertention and to vitiated blood. The condition of the blood is due to auto-infection, and the floating in the blood stream of waste materials.

The waste material found in the blood is due to over-eating, excessive drinking of alcohol and auto-intoxication. In the latter case the chemistry of the system is unbalanced, there is faulty metabolism, and waste and repair do not take place equally. There is more waste than repair, and the organs which preside over elimination of waste material being over-taxed are unable to efficiently take care of the excess, and consequently some waste material floats in the blood stream, acting as a poisonous substance, vitiating the "rivers of life," and degenerating the "river beds."

Degeneration in old age takes place by two methods, fatty degeneration, and calcarious degeneration. Fatty degeneration is the increased production of unhealthy fat, due to defective nutrition, and when the fatty degeneration effects the liver, kidneys or heart we have serious pathological condition.

Calcarious degeneration is an unnatural increase of lime deposit in the tissues. These products are often found as true incrustations. When calcarious degeneration takes place in the walls of an artery the vessel becomes hardened, loses its elasticity and its calibre becomes smaller. At this time the resisting powers of the system are lessened and a long train of symptoms, particularly those pertaining to the circulatory system are in evidence, and fatal results from apoplexy, heart or kidney disease are likely to follow.

When arterio sclerosis has manifested itself by hypertention in the blood vessels, strong emotions, excessive mental excitement or physical strain is likely to endanger life by a sudden rupture of a small vessel in the brain. In suspected cases of arterio-sclerosis the experienced physician can often determine the condition of superficial arteries by palpation. However, a more accurate test can be made by a modern sphygmomanometer. This instrument is virtually a pulse pressure gage, and by it we can measure the blood pressure fairly accurately. According to Professor Gumprecht, the normal maximum blood pressure averages when lying at rest should be for children one to three years, eighty-five to ninety-five millimeters; for children over three years, ninety-five to one hundred and ten millimeters; for adult females, one hundred and fifteen to one hundred and twenty-five millimeters; for adult males, one hundred and twenty-five to one hundred and forty millimeters. The mean arterial pressure is about three-quarters of the maximum. When the scale in millimeters on the sphygmomanometer is lower than the normal the vital energy must be improved, which is comparatively easy to accomplish. On the other hand if the column of mercury shows increased pressure on the scale, arterio-sclerosis with hardening of the arteries is probably present, and

proper advice and treatment is indicated.

An artery of the body can be compared with a flexible rubber tube, used for a drop light, and filled with illuminating gas. Continual over-pressure of gas within the tube will affect the walls of the tube, and diminish its elasticity. If the tube is slightly damaged or obstructed, increased pressure of gas may cause a fissure in the inner wall of the tube. To make the tube to do good practical work it is absolutely necessary to moderate the pressure of the gas. So it is with our arteries. When arterio-sclerosis first makes its appearance we must reduce the pressure in the blood vessel.

While old age cannot be prevented we have agencies at our disposal which will materially assist in retarding it, and in making its symptoms more comfortable. These agencies are high frequency electric currents, diet and hygiene. The physiological effects of a high frequency current are due to the spark, or condenser effect which produces mechanical effect on the tissue, an increased heat in the body, and the formation of ozone, and ultra violet light. The local action is accomplished by a general reaction, the blood pressure is lowered and combustion through the lungs is increased. The eliminative processes are generally stimulated.

Formerly I obtained high frequency currents by the use of a transformer attached to a static machine, but recently I have been using the Hyfrex coil. The principal advantage of this apparatus is that it is small, about one-third to one-quarter the size of an ordinary high frequency machine, and about one-third the price. It can be connected with any electric light circuit, either direct or alternating, and its mechanism differs from any other apparatus employed for high frequency or X-ray purposes. The Hyfrex coil consists of, first, a specially wound Tesla coil with a superior mica condenser; second, a unique step-up transformer, arranged so that it can be used on the direct or alternating current; third, an improved ribbon interrupter, made in such a manner that the current can be gradually controlled from its minimum to its maximum output, and by so doing eliminate the necessity of a rheostat. In this mechanical interrupter the contact points are made of annealed silver, and do not get extremely hot or adhere. This latter feature is one which saves a great deal of trouble in the management of a high frequency apparatus. When the parts of this new apparatus are assembled it is capable of giving a superior high frequency current by the use of only one pole. This pole may be used for auto-condensation or locally by vacuum tubes, or metallic point contact, and also to obtain the X-ray.

Treatment by the Hyfrex coil: A senescent patient with arterio-sclerosis may be placed in a solenoid, and connected with the high frequency apparatus, or he may be placed on a condenser couch or chair. In the latter case he may lie or sit without removing his clothing, and be subjected to a bombardment of millions of oscillations per second. In from twenty to thirty minutes his blood pressure will be reduced from ten to fifteen millimeters, and his temperature raised one to one and one-half degrees. This seance may be repeated three or four times a week. While subjected to the electric action, the system is

energized, the circulation of the blood equalized, the blood pressure is reduced, the general nutrition is improved, functional activity stimulated, the proper relationship between waste and repair is better sustained, and at the same time the elimination of poisonous products takes place more rapidly. After repeated applications nature assumes her normal functions, or as near normal as the case will permit, and performs her own work without the electrical stimulus.

At this point I wish to say that I do not depend entirely upon high frequency currents in the treatment of arterio-sclerosis or senility, for diet and hygiene play an important part. As one grows older he requires less food. An old man requiring one-fifth less than an adult. In a general way most people eat too much, especially in our large cities, and they take too little exercise.

As one writer on this subject has well said there are few of us who are muscularly, and cerebrally well balanced. We live too much in the brain and too little in the body.

The old man or woman should eat little at a time, often as necessary, and chew much. A large rich meal should never be taken, particularly in the evening, because under the influence of the digestion, the circulation of the blood becomes more active and the blood pressure increases. Tea, coffee and alcoholic beverages should not as a rule be taken; however, habit has much to do with this. My advice on the subject, generally speaking where arterio-sclerosis exists in the aged with the accompanying full pulse, distilled and fermented drinks should be given up entirely. However, in the old man of the opposite type, who has a weak pulse, and is easily exhausted, wine and even whiskey or brandy may be taken in small doses, preferably at meal time. I have no doubt in many cases of the aged with hardened arteries, that alcoholic beverages are responsible for attacks of apoplexy, angina pectoris and acute bladder and kidney diseases.

Doctor J. Boy-Tressier, of France, says that "fresh air and the inhalation of oxygen is as important to the old or those growing old, as it is to the infant. However, the aged must be protected against draught. I am emphatic in recommending fresh air for the aged, because the average old man in our large cities has a horror of fresh air. He is usually afraid of catching cold, to which he attributes nearly all his ills. Whereas, as a matter of fact the condition from which he suffers are due to faulty circulation, particularly in the skin. This is accompanied by profound congestion of the internal organs, especially the lungs, hence his bronchitis; but not due to fresh air or even a 'cold.'"

The old man with cold skin should have plenty of fresh air, but the surface of his body should be well protected with suitable clothing. He should wear light but warm clothing, with frequent massage of the body. For those who are approaching old age, or are actually senile, moderate but not violent exercise is very important. The movements of all the muscles are necessary, in order to promote nutrition and stimulate oxidation. As an exercise walking is perhaps the best, but it must not be at too slow a rate, or too level a road. A slight ascent, and gradu-

ally increasing it, so as to require a little effort, just short of fatigue, is the best method for taking walks. Passive movements by an experienced operator, or by means of the Zander mechanical apparatus is of service in some cases. The important point is not to over-exercise.

The literature on this subject is very small. However, I wish to give credit to the authorities whom I have either consulted or quoted, particularly to Doctors Charles Allen and J. Boy-Tessier.

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RETROSPECTIVE

The Final Utterances of Physicians.—The *British Medical Journal* relates that Nothnagel, who died alone in his room, noted his own symptoms to the last. He is said to have left to his assistant a note as follows: "Written on the evening of July 6, just after experiencing these severe attacks * * * died of calcification of the arteries." Traube also made observations upon himself to the very end. Locock wished it were possible for him to be present at the post-mortem examination on himself. Among Cuvier's last recorded words, as his fingers twitched involuntarily, were: "Charles Bell is right. Ce sont les nerfs de la volonté qui sont malades." Dyce Davidson died immediately after saying to his class, speaking of the next meeting, which was never to take place. "Four o'clock on Monday, gentlemen; four o'clock." Astley Cooper said at the very end: "God bless you and good-by to you all," and adding "you must excuse me but I shall take no more medicine." Brodie muttered: "After all, God is very good." The saddest of all recorded words were probably those of Goldsmith (the poor Noll of the Johnson coterie) who, when asked by his physician if his mind were at ease, said: "No, it is not." Hunter's mind, on the other hand, seems to have been full of bright thoughts, for he said: "If I could hold a pen what a book I could write." Darwin's last words were: "I am not the least afraid to die;" this must have been discouraging to some theologians who, by their oburgations of Darwin during his life, must have anticipated for him a death bed of the most excruciating psychic torture. Pasteur was offered a cup of milk, which, being unable to swallow, he said, "I cannot." He passed away, with one hand in his wife's, the other grasping a crucifix.

Good Hotels Needed.—Chicago has been complaining of the lack of hotels in which travelers can be luxuriantly entertained, hostelrys which can be recommended to a traveler with money to pay for the best. No doubt such palatial hotels will appear in good time. What is really needed for the present, not only in Chicago but in many other places as well, is not the showy and expensive hotel, but the comfortable one, as the daily *Times* very well observes: "Plain, wholesome food, good beds, attentive servants and quiet count for more than marble colonnades, tapestried walls and a host of modern improvements that do not cheer." The question is really one concerning the public health, the health at least of that large part of our population which finds it necessary to pursue an itinerant existence. The actor and the traveling business man have been for many years disgusted with the poor attendance of many of the hotels throughout these states and

with the dreary tastelessness and sameness of the food supplied. The food is oftentimes so unpalatable and so suspicious regarding the way it has been handled that many an unhappy wayfarer will make boiled eggs, which cannot reasonably be contaminated, his dietary mainstay. If a good house is discovered in any Western city, wherein one may be assured comfort and elementary cleanliness, it will soon get better advertisement from the pleased and grateful "guest" than the most successful hotel keeper could pay for with a year's profits. With the general inefficiency of hotels, there have been no corresponding complaints heard concerning the smallness of the charges.

Appendicitis in Pregnancy.—Vineberg (*N. Y. Med. Jour.*, May 11, '07) considers acute catarrhal appendicitis no more nor less dangerous in the pregnant state than otherwise. As a rule pregnancy after operation goes on to full term. In 36 cases operated on during pregnancy Vineberg had one death; seven patients aborted and twenty-eight went to full term, having a normal labor and puerperium. On the other hand, when appendicitis has resulted in a deep abscess formation, a complicating pregnancy is very serious. There is danger that the pregnancy will be interrupted; this is more likely to take place several weeks after the operation, when the uterus has had time to grow sufficiently to drag upon the adhesions which have formed. Of thirteen abscess cases reported in the literature, the treatment consisting of incision and drainage, five patients died, six aborted and two went to uneventful puerperium. Abortions may in addition be dangerous by disturbing the relation of the abscess wall and perhaps permitting a small pus focus to empty into the general peritoneal cavity; a fecal fistula may develop. The pregnant uterus pushes the cæcum upward and backward, so that if appendicitis develops it is much more dangerous in the later than in the earlier months. In the treatment of appendicitis in pregnancy the same principles must be observed as in the non-pregnant state. However one should not become panicky in the presence of an appendicitis in pregnancy and consider an immediate operation imperative. A mild attack may be treated palliatively and further developments may then be awaited; should another and a severer attack occur within a short time operation should not be deferred. Where the symptoms are very acute we should proceed just as if pregnancy were not present. We should give opiates freely during the first week after the operation, so as to avert premature labor. If abortion or premature labor is inevitable we must as usual in such cases, empty the uterus completely. In the presence of a large appendicular or post-caecal abscess we should only incise and drain, disturbing the relation of the abscess cavity as little as possible; we should not empty the uterus by forcible intervention immediately after operation. With ordinary precaution the uterus even in the abscess cases will not expel its contents until after the lapse of several days, when the local conditions will be such that no danger will ensue from the altered relations of the abscess cavity that such an event will bring about. What is to be done in the event of a patient falling into labor before a surgical intervention had been instituted? If the labor is to be allowed to proceed and operation deferred until delivery very grave danger would arise

from an internal rupture of the abscess; on the other hand incision and drainage would subject the patient in labor to the risk of contamination, in addition to which the aid which the contraction of the abdominal wall gives the uterus in expelling its contents would be lacking, or if the abdominal wall did contract it would be likely to force out the intestines through the incision in the abdominal parietes. In such contingency Gerster makes a free incision and empties the abscess as thoroughly as possible, being careful not to enter the peritoneal cavity; he then packs very tightly with gauze and next closes the abdominal wound completely by means of through and through sutures. The wound could be covered with collodion and a suitable dressing held in place by means of adhesive straps; after labor Gerster reopens the abdominal wound, removes the gauze and treats the abscess cavity as usual. Vineberg considers this plan very plausible and appropriate in such a contingency.

Syphilis Cured Without Drugs.—Dr. Elmer Lee reported to the Medical Association of Greater New York: An elderly woman, mother of grown children, trembling, weak, suffering pains in various fleshy parts and joints, especial disinclination to eat and incompetency to digest, came to his office in July. This case had been treated on and off for several years for a diagnosis of syphilis senilis, supposed to be acquired from the husband. The treatment consisted of mercurials and iodide of potassium. The woman was in utter despair and contemplated suicide by drowning. For a year she had been too weak and wretched to do the work even of her own room, and in this miserable and wretched state she was worn out and discouraged. Her son induced his mother to call upon Dr. Lee as a last hope. Examination by interrogation, inspection and microscope, showed no grounds for a diagnosis of syphilis. His diagnosis was starvation or malnutrition, mental anxiety and physical suffering. The treatment was domestic management, diet and personal interest and encouragement. The woman was set to work upon bettering not only herself, but also her home comforts. He found something for her to do and urged her to work, and in addition to visit the walks and lawns of the parks every day. She caught the doctor's enthusiasm, began to work and to hope and in two months could walk and did walk from Ninety-fourth street on the West Side to his office in Fifty-eighth street. For the first few weeks of treatment he had the patient call at his office three times a week, and once he went to her house to inspect her rooms and direct improvements. A few little notes were also written to her from time to time to help along and keep her encouraged. The case was dismissed three months after the first visit full able to walk anywhere, to do her own work and the mind relieved of a belief that she had an incurable disease. To-day she entered his office, saying as it was Thanksgiving week, she handed him a fresh crisp twenty-dollar note. Doctor Lee said he saw a case presented at the last meeting of the Association that had been treated two years for syphilis, based on a hair-splitting diagnosis, namely, a spot on the tongue. He said I feel positive that the diagnosis was an error and the treatment a blunder, and the patient exhibited had lost a part of the nose by operation for necrosis. He regarded the disease to the bones of the nose

due to the treatment by corrosive sublimate and iodide of potash.

This case was referred to as a friendly instance of caution, to the younger members and, for that matter, to older colleagues as well. Dr. Lee stated emphatically that he used diet and physical management in the treatment of syphilis, and that mercury and potash are out of date in his practice. The basis of the new treatment is supporting treatment, and that the best fitted treatment for this is diet. He said, I wish also to state that a great underlying cause of weakness and disease is partial starvation from insufficient and improper foods. Malnutrition is a world-wide factor of first importance in the causation of disease.

Calmette's Ophthalmic-reaction to Tuberculin has been well investigated by W. MacLennan, S. Webster and J. A. Kilpatrick (*Brit. Med. Jour.*, Dec. 7, '07). This reaction is had by instilling one drop of a one per cent. solution of tuberculin into the inner half of the conjunctiva. In from three to ten hours a positive reaction manifests itself, consisting at first of a slight injection of the conjunctiva near the caruncle, with a little lacrymation. In the "slightest reactions" that is all there is to be seen; and here the congestion is confined to the inner part of the membrane and may indeed be missed, unless it is carefully sought. The redness is however quite characteristic and can easily be recognized by comparison with the uninjected eye. The amount of reaction does not seem to have any clinical relation to the severity of the lesion. Some of the most pronounced reactions occur when there are no physical signs or clinical evidence of tubercle. There may be all degrees of inflammation; there may seem to be an acute general conjunctiva; sometimes there is pus; much swelling of the caruncle and photophobia. The severest reactions, however, give rise to no trouble, and clear up in from two to ten days. Any ocular lesion contraindicates the employment of this test, which appears to reveal the presence of quite benign and unsuspected tubercle formation. In the cases giving a positive or negative reaction to the hypodermic injection on the "old" tuberculin, the same result holds with the ophthalmic test. Such are MacLennan's findings. Webster and Kilpatrick conclude that all definite cases with definite bacilli in the sputum give the reaction. Where pulmonary tuberculosis is evident on physical examination, but quiescent (as judged by absence of temperature) some give the reaction and some do not; there is no obvious reason for this variation. Some doubtful cases gave the reaction, some did not, and some were indefinite; but there was no evidence to confirm or disprove the indications of the tuberculin inoculation. In presumably healthy cases two reacted and two did not, but in the absence of physical examination no evidence could be educed for or against the presence of tuberculosis. The most active ones did not show the most intense reactions. The reliability of the reaction can only be certainly ascertained by further investigation.

Underfeeding and Its Associated Ills. D. Roberts (*Brit. Med. and Surg. Jour.*, Nov. 21, '07) considers gastric, intestinal, anemic and nervous cases. The matter of underfeeding is generally overlooked. The present tendency in medicine is toward diagnosis of

abnormalities; underfeeding induces innumerable abnormalities in every organ, the fundamental causes of which are not considered. Underfeeding is more-over corrected in some of the best recognized forms of treatment, and the true cause of the trouble is thus unknowingly removed. It is difficult to determine exactly what constitutes underfeeding. Roberts has found that the caloric value and nitrogen contents of certain bulks of foods as eaten can be determined accurately if the patient can positively state his usual habits for each meal, using simple units of bulk as measures of quantity. Three chief causes of underfeeding are: effort to save time and money; loss of appetite; and complaints referred to the stomach. The clinical picture is necessarily that of the various functional conditions to which the underfeeding gives rise. The part of the organism most affected by the general undernourishment depends on the individual constitution, and on the work each organ is called on to perform. The nervous system (as would be expected from its more highly organized character) is most commonly affected; this is evidenced by deficiency, or aberrancy of innervation or by some weakness or irritability.

Epithelioma of the penis, states J. D. Barney, (*Am. Surg. Dec. '07*) occurs most frequently between the ages of fifty and seventy. Phimosis is its chief cause—hence the value of circumcision. It may last from five to fifteen years. Pain is present in only half the cases and it is not usually severe. In three-fourths the inguinal glands become involved; invasion of the vital organs occurs in more than 15 per cent. of the cases. Recurrence within a year in 39 per cent.; it may recur as late as five years after operation. The operative mortality is one per cent.; the gross mortality 32 per cent.; 38 per cent. of all cases are cured. Early amputation, with thorough dissection of the groins, is the operation of choice. The average length of life after the primary onset is three and one-half years. Sexual power is not necessarily destroyed by amputation of the penis. Melancholia rarely follows this operation; nor does it necessarily cause disturbance in micturition. Complete recovery after operation usually requires fourteen days.

Postapoplectic Tremor. J. H. W. Rhein and C. S. Potts (*Jour. for Nervous and Mental Dis. Dec. '07*) relate a case of tremor of the right-upper extremity resembling posthemiplegic tremor and ataxia of the arms and legs; and, pathologically, the presence of symmetrical lesion of the putamen (the outer portion of the lenticular nucleus). A lesion of the left lenticular nucleus may have been responsible for the tremor of the right arm; and the association of the unilateral tremor with the bilateral lesion is explainable by the fact that the lesion in the right putamen was not sufficiently extensive to set up enough irritation to cause this symptom on the left side. Post-apoplectic motion disturbances may be due to lesions of the lenticular nucleus, the optic thalamus, and the pores in the region of the superior cerebellar peduncles, and of the cerebellum, the cause in all instances being a disturbance of co-ordination. The cause of the disturbance when the lesion is extra-cerebellar is possibly indirectly from destruction of fibres related to the cerebellum directly or indirectly through the red nucleus. Thus Rhein and Potts be-

lieve the ataxia may indirectly have been of cerebellar origin.

Heart Clot in Pneumonia. Pathologists find this condition rare and think that it is only occasionally a cause of death. It can however, declares Beverley Robinson (*Am. Jour. Med. Sc.*, Sept. '07) be produced experimentally in animals, and clinical records present well authenticated cases. Unquestionably heart clot occurs sometimes in diphtheria, especially when pneumonia is present as a complication; with the clot this is usually pulmonary embolus, and sometimes pulmonary thrombosis. If in a given case the proper specific gravity and alkalinity of the blood are maintained, the continued high temperature will, by tending to destroy the pneumococcus, hasten the crisis of pneumonia. We should therefore prescribe salines in this disease, preferably in the form of a refrigerant drink to which citric acid is added. Venesection is appropriate to some cases; this should be followed by saline infusion. We should, at frequent intervals, give ammonium carbonate or the aromatic spirits of ammonia.

Blackwater Fever, declares Prout (*Brit. Med. Jour.* Nov. 9, '07) has its symptomatology in a special condition of the blood produced by repeated attacks of malaria. Possibly through the long continued strain on the blood making organs, there is a lowered vitality of the erythrocytes, the connection between the hemoglobin and the stroma is weakened; some exciting cause then produces a sudden hemolysis, and blackwater fever is the result. In some instances quinine is the exciting cause, in others chill (as in the paroxysmal hemoglobinuria of temperate climates), and in others toxins absorbed from the intestinal canal. After the onset of the symptoms we must deal with the irritating action of the dissolved hemoglobin in the blood; thus are jaundice, nephritis and small secondary symptoms produced. In treatment we must consider the enormous loss of blood and of the hemoglobin dissolved in the plasma. We get rid of the morbid products. We relieve the liver and cleanse the intestinal canal thoroughly with calomel; dermal and kidney elimination is assisted by diuretics and diaphoretics. When there is vomiting we leave the stomach severely alone and give a large high, hot enema each morning. If malarial parasites are found in the peripheral circulation we give quinine at least once, preferably by hypodermic; but this is not repeated should the hemoglobinuria endure. We support the patient's strength; but avoid alcohol in excess. We alleviate distressing symptoms; morphine for sleeplessness. For the resulting anemia arsenic and a change of climate.

Cancer is to some extent preventable, declares Copeman (*"Practitioner,"* Aug., '07). It is not in the ordinary sense an infection, for there is no evidence that its onset and continued growth is due to any recognizable micro-organism. Cancer constitutes the local manifestation of perverted body metabolism, an indication of which is afforded by the failure of the normal HCl secreting function in the gastric mucous membrane. Temporary amelioration of symptoms, with or without obvious retardation of growth has been obtained in a certain number of instances, as the result of treatment of one kind or another; however, in the present state of our knowledge early and

complete operative measures, where possible, afford the best results. Cancer sometimes disappears spontaneously, the tumor ceasing to grow and eventually becoming absorbed. There is consequently reasonable hope that continued investigation and research may afford accurate knowledge of the conditions favorable to such spontaneous cure, and further, that the indications thus afforded may result in the discovery of a specific treatment. (Cancer may be an infection. We are seeking and may find a causative organism. We consider several diseases infectious, though we do not know their specific germs.)

Myotonia Congenita or Thomsen's Disease is an unusual and peculiar condition (*"N. Y. State Jour. Medicine,"* Dec., '07). Thomsen first described it; in his own family twenty cases had appeared in four generations. It is hereditary. There is a retardation of voluntary movements with sudden tonic rigidity, when attempts are made to use the muscles after a period of rest. For from five to thirty seconds the patient cannot by any exercise of will move the muscles involved. By repetition of the movement it becomes easier and easier until finally it can be accomplished without difficulty. The musculature is often greatly developed in size. The patient may grasp the hand of another forcibly and though endeavoring then to take his own hand away would hold on like a vise until the subsidence of the spasm after a few seconds. One patient was unable to jump on moving cars or omnibuses, as the first muscular effort locked his arms in their first position for from ten to twenty seconds. An atypical case (in that it was not hereditary, the symptoms having appeared after a severe burn) was that of a laborer, 32 years old. The feet were first affected and then gradually the lower and upper extremities and finally the head. At the place of excitation a tonic contraction took place which spread along the muscle bundle; then came fibrillary twitchings and gradual relaxation; and finally a muscular protuberance at the point of excitation, which gradually disappeared. With intention movements a tonic spasm took place in the innervated muscle, and with stronger innervation it occurred also in the antagonistic muscle. This spasm lasted half a minute; by repetition the movements were accomplished more easily. The patellar reflexes were increased and there was no ataxia. The sensibility was disturbed, the analgesia and anesthesia predominating in general over the hyperesthesia. There was no muscular atrophy. There was frequently polydipsia and polyuria, but without glycosuria. An excised portion of the deltoid showed marked hypertrophy of the primitive fibres.

The Identity of Visual and Color Sensations.—G. H. Talbot (*"Med. Rec.,"* Dec. 28, '07) finds that light is the effect of undulations of the luminiferous ether. Each color of the spectrum is caused by a definite number of undulations or vibrations per second. It is the normal stimulus of the eye. The retina is the percipient part of the eye, and the elements essential for vision are in the layer of rods and cones and the outer nuclear layer. These, like all other bodies, contain molecules and are capable of the same molecular motion or vibration. When they vibrate in unison with certain colors, the sensation of that color is conveyed to the brain, where it is properly inter-

preted. Visual perceptions are the result of different wave lengths or of diffused colors affecting the granules and the rods and cones and producing more or less rapid vibrations therein. It is color, rather than form or outline, that enables us to distinguish objects; and it is color alone that gives us distinct visual impressions.

"Hebraic Debility" is the term which has been used in the clinics of the Massachusetts General Hospital, states H. Morrison ("Bost. Med. and Surg. Jour.," Dec. 19, '07). Jewish patients complain of "burning," and "sticking" pains all over the body, but generally in the chest and epigastrium. These seem to be more than merely neurasthenic symptoms; and the patients were visited at their homes to observe their mode of living and get at symptomatic details. Morrison has thus studied 51 cases, almost all recent immigrants, mostly from Russia, all of limited means, several very poor, some illiterate, none well educated. Thirty-eight were women. But one of all these patients was sick when he made his visits; twenty-four declared themselves perfectly well at the time. All were engaged in their accustomed activities. Morrison concludes that debility is a common condition among the Jewish patients coming to the Massachusetts General Hospital; as a rule it is temporary, but is apt to recur. Pain, constipation and apprehension are mostly complained of. The etiology of these conditions is to be traced to the peculiar circumstances under which the Jews have lived and still live in eastern Europe. The economic strain during the early years after arrival in America is also an important factor. Debility is especially common among Jewish women immigrants, because the economic strain weighs heavily on them. With them also, imitation and tradition and the ease with which medical advice can be obtained are factors to be considered. These debilities are not peculiar to the Jew, but to the abnormal conditions under which he has been living. Immediately he is relieved from these conditions his symptoms disappear and he becomes as men of other races. In treating these cases we must consider "not the disease alone, but also the man."

Dust and the Human Organism.—In a most important paper Harlow Brooks (*Dietetic and Hygiene Gazette*, December '07) finds that dust is in itself productive of serious disease conditions, particularly of the respiratory and digestive tracts. These primary conditions predisposed to secondary lesions, particularly to pulmonary and lymphatic tuberculosis. Many contagions are transmitted through the agency of dust. In a city the size of New York the production of a large quantity of dust, often of a highly dangerous character, cannot be prevented. Yet dust can in most instances be relatively easily and economically collected and disposed of, and the production of unnecessary dust can and should be prevented by properly framed and enforced regulations.

Adenoids may be safely and rapidly removed without general anesthesia, declares J. F. Barnhill, of Cincinnati, who after selecting a proper curette, has an assistant take the child upon his lap, placing its knees between his own and thus clamping them as in a vise. The child's head is thus placed upon the assist-

ant's left shoulder, where a second assistant holds it firmly. Neither a tongue depressor nor a mouth gag are necessary. The operator sits *vis-a-vis* and asks the child to open its mouth. The curette is then quickly inserted behind the palate, the posterior surface of which it should hug closely until the crest of the instrument is pressed firmly against the vomer at its point of junction with the body of the sphenoid. In this position the mouth must be opened to its fullest extent and the curette should be on a plane of 45 degrees to the horizontal, with the ample width of the fenestra surrounding the entire growth. Keeping the curette exactly in the central line of the nasopharynx the crest of the instrument is pressed firmly against the vault, in which situation it is quickly pushed backward and downward, the cutting blade closely hugging the entire base of line attachment of the adenoid, which is thus completely severed *en masse* and falls from the mouth when the head is held forward for that purpose. But twenty or thirty seconds is generally required after everything is in readiness.

Alcoholism.—The ever-vexed question of the role which alcohol plays in disease takes on vital interest in the "Rapport Fernet," in which was recently submitted to the *Académie de Médecine* a thorough investigation made in Paris hospitals and asylums. Etiological statistics were taken in the different services during fifteen months. In a total of 1,500 consecutive deaths in the general hospitals, alcohol was held responsible for 33.81 per cent., or more than one-third; it was the principal cause in one-tenth, and an accessory or auxiliary cause in two other tenths. The lethal influence of alcohol was less marked among women than among men. Although the difference is not as great as might be supposed. While the average death among males was 38.81, that among females was 27.29. In lunatic asylums the statistics were really terrifying; nearly half the males and one-sixth of the females died of alcoholism. Sometimes it was found the *vera causa*, as in meningo-encephalitis, cerebral ictus, liver, cardio-vascular or kidney lesions; sometimes it was the auxiliary cause as in pneumonia and tuberculosis. Fernet urges that the official statistics of disease should attribute to alcoholism the deaths really due to it as a principal cause, and not, as is now the case, to dissimulate the truth under cover of the names of the organic lesions which it produces. We would then find alcoholism and tuberculosis taking the first places among causes of death.

Zoology and Medicine is the title of a most interesting paper by Dr. R. Blanchard in the last *Annual Report of the Smithsonian Institution*. A number of advances have been made in the last decade from the study of zoology in relation to man's well being. Dr. Blanchard writes of the strong defence of human health made by the leucocytes, which resemble animals in structure and physiology; "the physiological equilibrium that constitutes health is assured only because of their constant vigilance." There are 500 known species of mosquitoes; the stegomyia and the anopheles are by no means the only species hostile to human health. Animalculæ are the causative agencies of sleeping sickness and of many other less known diseases. Appendicitis may often be traced to an animal parasite; here Blanchard is in accord with Metchinkoff.

DIET IN EXPERIMENTAL TUBERCULOSIS.

Lannelongue and Achard, who have done much original work in tuberculosis, recently made known some important experiments to the Paris *Académie des Sciences*. Sixty male guinea pigs were divided in three equal series of approximately equal weight. They were first put on a common diet; for eleven days they did not change weight. Then on the same day each series of twenty were inoculated with a uniform dose of the same emulsion of tubercle bacilli. Each series, while continuing the common diet to which they were already accustomed, was then given a different supplement of food. Each animal of the series No. 1 had a nine-grain ration of butter; each of No. 2 twenty grains of sugar; each of No. 3 twenty grains of gluten. Each supplement answered to an isothermic diet of about 145 calories. The results were very definite—remarkably so. The "butter" series all died in 40 days; the "sugar" series in 87 days; while the "gluten" series lived on for 371 days before total extinction. It is thus concluded that nitrogen should take up a large part in the diet of tuberculosis patients.

Indican and Uric Acid.—Dr. Wm. H. Porter tests for indican by taking 10 c. c. of urine, 10 c. c. hydrochloric acid and 5 drops of 1-2 per cent. solution potassium permanganate; the whole is shaken and then 5 c. c. chloroform is added. After again shaking a purple coloration followed by deposit of blue pigment shows the presence of indican. His test for over-produced uric acid is to boil the upper strata of urine in the test tube and to add a few drops of a 4 per cent. solution acetic acid. The tube is left standing for 3-4 hours, after which the over-produced uric acid will crystallize out just beneath the surface of the urine in the test tube.

The Etiology of Tuberculosis.—Ravenel's communications are always important; he finds (*Am. Jour. Med. Sc.*, Oct., '07) that the alimentary tract is a frequent portal of entry for the tubercle bacillus. This germ can pass through the intact mucous membrane of the alimentary tract without producing a lesion at the point of entrance; especially does this take place during fat digestion. The bacilli pass with the chyle through the lacteals and thoracic duct into the blood, which conveys them to the lungs, where they are retained largely by the filtering action of the tissues. Infection through the alimentary tract is especially frequent in children. Milk from tuberculous cows is the source of infection in many cases. We cannot now state the exact proportion of cases of tuberculosis due to this cause, but it is probably considerable. Tuberculosis can be communicated by contact-kissing, soiled hands, accidental injuries in post-mortem work, or during the cleansing of vessels used by consumptives, etc. But these modes of infection are comparatively rare.

A Political Boon.—It is neither our province nor our custom to report presidential booms; but an exception must be made in behalf of the one which the Chicago "Tribune" avers has been started by physicians in favor of Attorney-General Bonaparte. The campaign managers, it appears, are physicians, and the issue is the "extermination of the criminal classes," which proposition Mr. Bonaparte is known to favor. The physicians would confine habitual

criminals in "asylum prisons" for life; one, we know, would do a vasectomy on every criminal. But fortunately for the American evil doer, this radical man is an English citizen and can properly take no part in an American boom. Mr. Bonaparte would hang all criminals; and the physicians admit the habitual offender should be hanged, but fear the country is not yet ready to go this length. "The movement is being conducted by confidential correspondence from city to city," states the veracious "Tribune;" "and is interesting on this account as well as because of its new national issue."

The Extent of Mosquito-Spread Diseases.—Jackson has found that the filarial worms were in the blood of from 10 to 50 per cent. of tropical and subtropical peoples; wherever mosquitoes have been malaria has coexisted with them. In the year following May, 1889, 18,594 deaths were due to malaria in the United States; during the next decade the death rate fell from 19.2 per 100,000 to 8.8 in the registration area, which was about one-third of the whole. In Italy the mortality during the last few years has fallen from over 15,000 to 4,700. During the past century 100,000 people died with yellow fever, and five times as many were infected.

Cracked Nipples.—Rondand (*Jour. de Med.*, Oct. 6, '07) demands that the nipples should receive careful attention during the last months of pregnancy. They should be washed daily with soap and water and kept covered with a dry dressing. Following upon delivery they should be carefully washed before and after each nursing, a mild antiseptic solution (boric acid or brandy and water) being used. A wet compress is inadvisable; it may cause maceration of the epidermis. Between the nursings a dressing made of three thicknesses of sterilized gauze is kept applied, and over this a layer of absorbent cotton is laid, and covering all a bandage to keep these dressings in place. The child's mouth should be washed out before nursing with a cotton tampon moistened in boric acid water. For pain the glycerite of starch may be applied and covered with dry gauze; and then before nursing the nipple should be carefully washed with boiled water and hydrogen peroxide (A. A. P. A.). Rubber nipples should be avoided as much as possible; they are difficult to keep clean.

Canada's Oldest Physician, and also probably the oldest in America, Dr. William Bayard, died recently in St. John, New Brunswick. A common ancestor of Dr. Bayard and of the late Hon. Thomas F. Bayard (who filled, among many offices, that of our first Ambassador at the Court of St. James'), was Samuel Bayard, a wealthy merchant of Amsterdam, Holland, who married Annie Stuyvesant, daughter of the Rev. Balthazar Stuyvesant and sister of the redoubtable Peter of the wooden leg, one of the first Governors of New Amsterdam.

Pure Food in India.—A contemporary quotes from the "Nufidi Rozgar" (which no doubt excellent sheet is not among our exchanges) to the effect that if the clothes of an ordinary Bombay beggar were searched, cooked food sufficient to satisfy at least five persons would be found stowed in them. These gentry are regular venders of food; they eat as much as they can and sell the rest; they seem quite prosperous and able to send weekly postal notes to their homes.

MISCELLANY

The "Bends" recently claimed seven men in the shaft yard to the Pennsylvania Railroad in Long Island City. All recovered rapidly save one, who had worked in compressed air for five years, and was considered immune from attacks.

Can a Corporation Advertise to Practice Medicine?—This question has been brought before the courts, states the "Evening Post," which observes: "If there is one thing which a corporation cannot do in this country we shall be glad to hear of it."

Reprehensible Advertising. A Western Journal considers that some medical societies "are hewing to the line pretty close in their endeavor to uphold ethics". At Peoria, in Illinois, a member was hauled over the coals recently for driving a piebald horse on the ground that it was a bid for public attention.

Urethral Stricture. It is a pernicious habit, states the American Journal of Dermatology, to look for a stricture with a small sound. We should begin with a large one and use progressively smaller calibres until the size is determined. The points of small sounds are very apt to be engaged in the urethral glandular crypts.

A Literary Event.—Dr. S. Weir Mitchell's new novel begins in the January "Century." It is entitled "The Red City" and is announced as a mate to "Hugh Wynne;" and the earlier chapters introduce some of the characters of the latter story. A young Huguenot emigré is the hero; and the scenes are set in Philadelphia in the time of Washington's second Presidency.

Red Light and Iodine Paint. J. D. Brunton (Brit. Med. Jour., Nov. 16, '07) has found that if iodine be painted on the skin in the dark, and very red light is used, such as is given by an ordinary photographic lantern, there will be quick absorption. Even under prolonged use the skin will be neither discolored nor blistered. The part painted should be immediately covered up, for exposure to white light fixes the iodine in the skin.

Iritis.—The causes are syphilis, rheumatism, gout, tuberculosis, gonorrhœa, diabetes and malaria, those occurring in the course of infectious fevers, herpes zoster and cerebrospinal fever. Metabolism is causative in many cases formerly thought idiopathic. Recurring or relapsing attacks in otherwise healthy individuals are due to autointoxication. W. M. Zentmayer (*Therap. Gaz.*, Aug. '07), thinks those are injudicious who claim that there is extensive association of accessory sinus diseases with ocular affections.

Periodical Examinations of the Ears are advised by W. S. Bryant ("N. Y. State Jour. Med.," July, '07); and functional tests should be applied at all ages, and after any general disease of the upper air tract; serious aural damage may take place without the patient's knowledge. When the individual is aware of the impairment, the pathological changes are already far advanced. The early detection of aural disturbances allows adequate treatment, with the expectation of the prevention of aural vertigo, tinnitus, deafness, intracranial lesions from middle ear suppuration, and the dangers of systemic infection.

Plague and Religion. The Medical Record reports that the efforts of the Indian Government to stamp out the plague have been enormously hampered by the refusal of the Mahomedans to evacuate infected villages on the ground that the Koran forbade them "to flee from the wrath of God." Fully 250,000 deaths from the plague among Moslems are estimated to have been caused by adherence to this belief. Now the heads of the Moslem faith, urged thereto by the Government, have proclaimed the untenability of this idea and have declared that the Koran expressly enjoins the faithful to quit places smitten by Allah with this disease. The Government is scattering the proclamation broadcast.

Smokestack Arsenic.—The "United States Geological Survey" states that thousands of tons of arsenic are annually wasted in the fumes that pour from the stacks of our great smelters; yet in our breezy, extravagant American way we imported in 1906 some 8,000,000 pounds of arsenic or arsenic compounds, which cost us \$375,000. In that year our domestic production of arsenic was only one-sixth of the quantity imported, of the value of only \$63,460. In the United States, as in England, the great bulk of the arsenic produced is from smelter fumes. English smelters are rightly prohibited from pouring noxious arsenical fumes into the air; they are thus forced to make money out of the white arsenic saved. In the United States we have only two smelters which have plants for saving arsenic.

The Prolongation of Human Life is the title of a new volume by Prof. Metchinkoff to be published presently in which he will develop at great length the main thesis of his former book, "The Nature of Man"—that our lives are not only unnaturally short but also unnaturally burdened with physical and mental disabilities. The legacies received by man from his ancestors are the prime cause of many of the ills of the race and of the pessimistic trend of so many systems of philosophy and religion. Metchinkoff believes that these traits, which were in harmony with the conditions of the remote past and are so discordant in the present environment may be counteracted by rational hygiene. His hope for the prolongation of human life has, he declares, substantial assurance based upon the certainties of science.

Few public buildings are ventilated. Especially in their courts do the judges complain constantly that they are either half suffocated or almost blown off the managerial bench. Purifying the vitiated air of crowded rooms by opening doors and windows causes an inrush of cold air which, especially in winter, is likely to endanger delicate constitutions, and it is afterward necessary to reheat the rooms to bring the temperature to the normal. Successful experiments have been made at the Royal Theatre in Stuttgart with a new apparatus designed to distribute ozone at fixed intervals throughout the buildings. The ozone is conducted by small tubes to all parts of the house, and turned on, regulated and turned off at will. The result has been excellent, states the German Health Engineer, the air being completely purified within a few minutes. The upkeep of the apparatus is said to be between one and two cents an hour.

ENVIRONMENT AND DISEASE.

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THERE are three main factors which make up the life of the average individual—his heredity, his environment and his will. Sometimes the last of these will do much to rid one of the effects of an unfortunate heredity; and we constantly see how a good stout will makes one the master of a very unfortunate environment. In this paper I am concerned with unwholesome conditions of living external to the human organism; and shall consider how disease results when they are not overcome or successfully coped with.

It was Herbert Spencer who defined life as the constant adjustment of internal relations to external relations. This is a very incomplete definition; life is a great deal more than is here implied. Nevertheless it is adequate for the purpose of this paper; it expresses how absolutely dependent the individual is upon external conditions. From the moment of conception the organism which is afterward to become the sentient creature is constantly being influenced from without. Even in the womb, during the embryonic period, while the cells are becoming differentiated and the organs are undergoing formation, and during foetal life, when the organs increase in size and begin to take on their several functions, the future being is most acutely influenced by environmental conditions—gravity, the purity of the mother's blood, its oxygen content, its chemical constitution, uterine and placental diseases, diathetic affections, the results of an aberrant maternal nervous system. When such influences are abnormal the tissues of the foetus must surely suffer.

There may be arrested development, excess of development of some parts or a perversion in the formation of an organ. Maternal metabolic poisons acting on the embryo may effect its tissues so abnormally that in post-natal life the power of resistance to disease is greatly lowered. Infections and intoxications in the mother may be transferred to her child; children born with tuberculosis, syphilis or pyogenic foci are nearly all cases of transmission from an ante-natal environment.

Upon being born the organism comes most intimately in relation with its environment. Every human tissue, however minute, is but a rearrangement of elements which enter the body from without, through the air or with the food and drink—hydrogen, oxygen, carbon, nitrogen and the like. There is nothing in the body which is not to be found in the body's environment, which has not been abstracted from nature outside it. Therefore a man will be very much indeed what his environment makes him. And this is so with every aspect of being. The things we eat, the air we breathe, the sunshine and the flowers about us, all external phenomena, generally affect the senses benignantly; and the usual reaction to these stimuli from without tend to the condition which is termed health.

However, an individual seldom finds himself in an environment to which he is perfectly adapted; indeed, such an environment is hardly desirable. For struggle fills up life so largely, brawn and good digestion are so much the result of an output of strength, and happiness so often comes about because of difficulties overcome. The best environment, the one most conducive

to health is one not wholly free from struggle, but rather one in which the individual may be victorious in his conflicts, and when the victories are not achieved at too great a price. When the stresses and strains of life are greater than the organism can bear disease of one kind or another sooner or later supervenes.

The external influences which can act upon man are now considered, in the last analysis, to be either chemical or physical in their reactions; this is so as regards air, light, electricity, the food-stuffs which are ingested, temperature changes and the like. The external agencies which act through the sense-organs—the ether waves that affect the retina, the air vibrations that set in motion the aural apparatus, the chemical substances that act upon the olfactory and gustatory mucous membranes, the mechanical agencies which excite the motor and sensory impulses, all belong to the same category. It is even held nowadays, and quite truly, that in conscious life memories are called forth and association processes are stimulated into activity by physical or chemical influences from without upon our sense organs. One's environment, therefore, may influence not only the tangible body, but may also induce an abnormal psychism, indeed we now agree that we cannot look upon the mind and body as separate entities, as things which may be considered apart. A baneful influence from without may permeate every phase of existence, and may bring about disease, mental as well as physical.

Environmental factors which may be inimical to life are as numerous as are external phenomena; even to enumerate them would take up a good sized paper. I purpose here to discuss only adverse atmospheric conditions—climatic, seasonal, rarified air, humidity, dust, infection by insects, and the bacterial content of atmospheres.

When we have exhausted every therapeutic means at our disposal and the patient's condition still persists in being intractable, we advise a change of climate, which is in reality a change of environment. And where the disease is not hopelessly chronic the result is most salutary. A bronchitis which no drug has affected, an obstinate insomnia, a weak heart after diphtheria or gripe are remedied after a day or two of climatic change. It does not generally matter what climate is selected so long as it is different (though not radically different) from the one in which the patient has been living. Still there are some important considerations. Variable and very moist climates had, as a rule, best be avoided. Tuberculosis occurs more or less in all localities; but it seems to prevail inversely as the altitude progresses above sea-level. A rare atmosphere strengthens pulmonary respiration by requiring greater effort in breathing. Long-continued heat predisposes by depressing the vital powers. The more isolated and less densely populated a region, the less likelihood there is of infection. Climates are modified, in general favorably, by trees, rocks, rivers, lakes, drainage, winds, rains, the proportion of sunshiny days, and the like. Vegetation has an important regulative effect, modifying the winds, equalizing the temperature and diminishing the dust. Animal life depends upon the free oxygen in the air. Pure air is essential to normal metabolism, the conversion of oxygen, food-stuffs and the fluids ingested into healthy tissues. Imperfect oxygen-

ation in the tissues results in well-known degenerative changes and increases susceptibility to infection.

Atmospheric humidity is related to animal perspiration. At a low temperature the sweat evaporates as rapidly as it transudes through the skin; it is thus insensible perspiration. As the humidity increases sweat may transpire, but its evaporation is progressively delayed until, when the humidity reaches the saturation point, the skin remains constantly wet. This reduction in evaporation diminishes the natural heat dissipation, so that with a high relative humidity, low or high degrees of temperature are poorly borne. Great humidity, by interfering with normal heat regulation of the body, may indirectly favor the "catching of cold," and by devitalizing the tissues, favor the development of infectious processes. Sickness is in general more prevalent in variable seasons. There is more illness in March, when the weather is uncertain, than in January, when the temperature is more uniform. Consumptives, by the way, do better in the winter months than in the summer. Marine climates, though ideally bacteria free, are apt to increase coughs.

The danger to health of atmospheric impurities is now becoming pretty well recognized. It is by this means—by inhalation—that tuberculous infection oftentimes converts merely strumous glands into true tuberculosis. Rheumatism, tonsillitis, diphtheria and many other diseases are due to germinal infection from the atmosphere. How pathogenic a dirty atmosphere may be is impressed upon anyone who has seen the series of plates which Dr. Woodbury had exposed when he was the Metropolitan Street Cleaning Commissioner. Of two such plates one would represent atmospheric conditions in densely crowded neighborhoods, where the sanitary conditions were comparatively poor. And such a plate would presently, after exposure, teem with bacteria, moulds, fungi and every kind of impurity deleterious to human health. Its companion plate, exposed in a cleanly and salubrious district under precisely similar conditions, would be almost wholly free of impurities. Miguel, in a very valuable table, shows how at sea there are 0.6 bacteria found in a cubic metre of air; at an altitude of 2,000 metres, 3; at the summit of the Pantheon, 200 bacteria; in a Parisian street, 3,480; in a new house, 4,500; in the air of Parisian sewers, 6,000; in an old house, 36,000; in the Hotel-Dieu (Hospital), 40,000; and in the Pitie Hospital, 79,000 bacteria to the cubic metre of air.

The subject of atmospheric impurities is beginning to take on an interest apart from purely medical practice; the Merchants' Association in New York City, for instance, has in quite a large and wholesome spirit taken up the matter and has engaged Dr. D. D. Jackson (B.S.) to prepare a report for the information of the public. Dr. Jackson's studies tend quite to the same conclusions as Soper, Harlow, Brooks, Flick and many others have reached. The subject is indeed a vital one, especially to urban communities; and we may be sure it will be much agitated for several years to come.

Even if dust does not contain bacteria it may be so gritty or so large in amount as to irritate quite seriously the mucous membranes of the eye, the nose, the throat, the Eustachian tubes, the bronchi and the lungs, thus making them an ideal soil for germ im-

plantation. If the respective bacteria be present in the dust one is indeed fortunate, or peculiarly disease-resistant, who does not contract conjunctivitis, catarrh, middle ear disease, tonsillitis, quincy, laryngitis, bronchitis, pneumonia, influenza, tuberculosis, or rheumatism.

Winds also have to do with disease propagation. Wind storms are found to be followed by epidemics of acute "colds" and catarrhs, wherein many who were previously in very good health have become affected. And thus oftentimes have resulted cases of chronic catarrh and diseases contracted by inhalation. Of course most of those who contract diseases have been predisposed by one or several among multitudinous predisposing factors; otherwise illness would be much more prevalent and death rates would be enormous. Jackson has found that most of the sickness and death due to throat and lung affections occur during those months when high winds are prevalent; on the average most deaths from influenza, bronchitis, tuberculosis and pneumonia occur between December and April. And the enormous death-rate from these diseases would no doubt be much decreased were the quantity or the virulence of dust in city streets reduced.

One must have a strong stomach to review with equanimity the results of Jackson's examination of city dust. He has found in it plaster, iron-rust, stone-dust, cement from building operations, dirt from excavations or from loosely constructed carts, ashes, house-sweepings and dried garbage blown from barrels and cans, chimney-soot and cinder from industrial plants, excrement of horses, dogs and other animals, dried sputum of the tuberculous and those having bronchitis, naso-pharyngeal catarrh or pneumonia in its first stages. If the material last mentioned is concealed beneath other accumulations or does not happen to be exposed to direct sunlight for some time, the bacteria are not destroyed and the disease may be contracted by inhalation. Cloudy and windy days, such as are frequent in December and March are most productive of germ diseases, in the lower animals as well as in man. When the wind is blowing eighteen miles in an hour there are five times as many bacteria in the air as when it is blowing nine miles per hour. Bacteria are thus often blown upon raw foods exposed for sale. New York City dust contains half a million bacteria per grain (15 grains); and Soper computes that the average citizen will inhale in a day 16.5 mg. of dust, containing 8,250 bacteria. Any city could certainly spend money to no better advantage, therefore, than by sprinkling and then thoroughly sweeping its streets, removing the material gathered up and then thoroughly flushing the thoroughfares.

The smoke nuisance is deleterious to the communal health. Infection conveyed by insects is by no means rare. The part played by the mosquito with regard to typhoid fever and malaria are now well recognized. It is only recently, however, that we have come to consider the house fly dangerous. And this the pest certainly is. It is one of the chief sources of infection and in New York City it causes annually about 650 deaths from typhoid fever, and about 7,000 deaths from diarrhoea. It is our habit to consider the fall rise in typhoid fever as an established institution; however, if this fall rise is set back two months

from the report of deaths to the time when the disease is contracted, it will correspond exactly to the curve of prevalence of flies and to the curve of rise in deaths from diarrhoeal diseases of both children and adults. It also corresponds to the temperature curve; it is, therefore, erroneous to attribute these diseases to hot weather alone. Climatic conditions may predispose by reducing the vitality but they are not the essential cause; temperature does not produce the specific germ—the causal agent—which invariably accompanies the disease. The activity of the house-fly, states Jackson, is in proportion to the temperature, and the times when this insect is most active and most numerous corresponds exactly with the time of contraction of diarrhoea and of typhoid fever.

Infantile diarrhoea and the dysenteries prevail throughout civilization in hot weather; these diseases are of germ origin. The immunity from diarrhoea of breast-fed babies and the frequency of its occurrence among artificially-fed infants point conclusively to germ transmission in food and drink. Several epidemics of a malignant type of dysentery have radiated from a single point and have disappeared completely when proper disinfection of closets was enforced. Flies generally go but a few rods from their breeding places except in warm and sultry weather, when they extend their travels by day and flock indoors at night. Food and filth attract them equally. Jackson states that he captured along the New York river front a fly which was carrying in its mouth and on its legs 100,000 fecal bacteria. "He had been behind the large packing-boxes down by the wharf and was on his way to the nearest milk-pitcher."

I submit that we, as practitioners of medicine, do not adequately appreciate the etiological factors which are inherent in environment. They should, in every case, be inquired into as a part of the anamnesis. And we should, I believe, make one visit at least whenever it is feasible at the homes of patients who call upon us having only the expectation of office treatment in view.

Severe Types of German Measles.—Rubella, states the *Medical Record*, is usually regarded as a harmless disease. However, in weak and emaciated children it may have some very severe complications in the digestive or respiratory systems, such as enterocolitis and bronchopneumonia. These cases do not seem to be true measles, as has been held. A case of rubella is cited in a young woman of twenty-two years, who, on the sixth day, after the eruption was observed, developed a temperature of 105°, became hoarse and experienced difficulty in swallowing. The tonsils became greatly enlarged and the entire oval mucosa was markedly swollen. The tongue presented a thick coating which, in contrast to this sign in scarlatina, was limited to the tip and edges of the organ. Much general depression was evidenced. Under appropriate treatment the patient was well in a week, although prostration was prolonged. Cases of secondary angina have also been described by other writers; in one instance the appearance of an epidemic in a hospital was characterized by the development of bronchopneumonia, adenitis, meningitis, and otitis media in some of the patients. From such reports we should not consider rubella a disease without danger.

THE OVARIAN TEMPERAMENT.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA.

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FACING at the present moment so many lines of thought, I realize in advance that this paper can be but a desultory fencing about the concrete vitality of my chosen subject. The importance of the specialties of the usual medical fashion of re-hashing the dose of this therapeutic or of that, for an eruptive disorder, or a migraine, or a jaundice; or again, the choice of adaptability between the thousand and one competing "new remedies" pushed under our noses so assiduously by their promoters for us as doctors to hustle down the throats of patients to test the proposed conquests of remedial values; all this hustle and rattle of progressive medical treatment will presently slump into the rising tide of naturalism which promises to swamp much of the prestige and practice of our profession unless we broaden and deepen our study of the temperament and physiological conditions that underlie and control human life. Of what consequence will be the dose of codeine within the corral of vital safety, or of the tentative ventures with strychnia, or of the digestive affronts of dead pig pepsines, when a strong mind, a governing will, a devout faith, a magnetic hand, after the example of Christ the Healer, can apply their concentrated influence to calm a storm of physical disturbance?

When on a whirling train of steam cars one night, I observed that a little girl of about ten years of age had become distressingly sick, and with her head hanging forward she was vomiting. In the province of doctor on that flying train I felt myself practically helpless—even to the point of concealing my profession. "Let me just have a seat by the child's side," said a healthy-looking gentleman two seats away, "she will not be sick long." Taking a seat quickly by her he said: "Little girl, you won't feel sick any longer. Let me put one of my hands over your stomach, and I'll hold the other hand against your back, lean up by me a few minutes and you will be well." In about five minutes that little girl straightened up, drew a deep breath, and said that she felt all right. Have we any remedies to equal that treatment in so short a space of time?

When considering the expansive progress of the Eddy Christian Science cult, also of the recent conspicuous growth among Episcopalian circles of the Worcester Emanuel Movement of "Christian Mental Therapeutics," we must intelligently recognize the fact that our old past-day ideas of depending merely on the medicinal effects of routine drugs alone will presently be proved both superficial and fallacious as media of the healing art. As a profession we will be driven to reconstruct our comprehension of human nature, its fundamental allies of temperament and congenital environments that mainly govern human nature in health and in disease—that constitute a psychic strata that underlies all the old-time system of diagnoses as taught in our medical classes and text books. In this spiritualized epoch of healing which is growing evident, the real physician will be the brainy man, the man of elevated perception, of clairvoyant mental tact, of sensitive and profound sympathy with the

human source and genetic tendencies of each personality. He will represent these superior qualities of healer in addition to his equipment of capacity to discreetly diagnose diseased and injured conditions, as judged by symptoms, and for which to prescribe appropriate chemical substances that may worry their way through the blood of the body to some benefit, though they fail to mend the mind or heal the soul. Withal it is through the agencies of mind and temperament, these higher adjuncts of the physical manifestations, that the afflictions of the body proclaim their share of human partnership. It must be understood that in all situations of body and mind the benefits of rational hygiene, of common sense cleanliness, of sanitary breathing-air are of paramount value for protection of health and healing of the sick. The mind may be a wonderful adjunct to hygiene. With the mind set at ease on the substantial expectations of health, including the restoration of health when impaired, wonderfully fortifies the chances for cure.

As a reasoner I do not for one moment subscribe to the blind strenuousness of the strict faith cure creed. It is an ignorant fanaticism which often proves itself to be a stupid delusion in cases of profound severity, cases that require common sense surgical aid, cases of cellular degeneration and abscess of internal organs, also in cases of delirium and cerebral lesions where patients cannot exercise the aid of co-operative consciousness, and yet further in serious illnesses of infants and small children whose mental grasp of faith is practically nil. We may allow that the faith cure does not presume to restore to health every case of illness. We are wont to say of faith curists that through their delusion they let their sick die for want of proper attention; and they retort that regular doctors do no better, but let their sick cases die as often also, in spite of their boasted excellence of medical skill! And there it is up to us! Considering the respective proportion of recoveries, do we not find a suggestion of the great number to whom we have administered medicines, but who might have survived without them? And how often we mentally, yes, openly, admit that many of our cases are enabled to pull through critically dangerous conditions more because of the patients' personal faith in what we assume to do for them medically, also because of the helpful solace of the good nursing which they receive by cheerful attendants, above and beyond the uncertain values of the medicines that we with so much formality and professional pretension administered! In very much of our work which rewards us with successful outcome, there has operated the helpfulness of confidence or faith. In fact, without these the gratifying average of what we regarded as cures would have been very materially reduced. Therefore every actively intellectual medical practitioner will discern that the increasing prevalence of sensational mind-cures, by psychological impress that stimulates and sustains the reparative process of normal metabolism of the body, and thus enabling the patient to pull the wobbly physical condition out of its soggy boots of discomfort, really present for admiration a high function within the realm of reason—one that tends to swamp the medical prestige of even the four years course graduate, and breathes a question of proficiency in full view of the transformed estimate that trustfully turns to

the resourceful belief in the power and process of God instead of depending solely on the limited equipment of a booklearned man.

Then what? In order to hold fast the field of medical service to the world, with its desirable honors and remunerations, the logical physician will lower his flight from amid the clouds of modern bacterian confusion and obscure technicalities; for practical grasp he will hover down to the genitive plane of elementary conditions of man and of woman by which the combined temperament of both shapes the ghosts and the realisms that pervade human life as God gave it to the world. It is a specially practical problem for the intelligent physician to understand that in the cycle of disease, cycle of social construction and defalcations, and of human criminology, the application of what is termed mental philosophy, psychological analysis, affords the most available sphere of remedial practice. Every physician should effectively realize that while man and woman present a certain divergence of sex, they essentially are one. Neither is subject to moral or physical defect or disease that has not a co-ordinate in the other. The key to the combination fastness of human nature is the inseparableness of man and woman. And, as we shall presently perceive, it is and always has been the ovarian or mother temperament that directs the tide of human experience and that dominates the destinies of mankind whether for better or for worse. Let us examine some evidence of the indisputable equation of this significant hypothesis. The moment that we take deliberate glance at the ovarian temperament we concede that after the exceptional origin of Eve, every child born, male and female, has been formed and endowed by its mother. Man impregnates, but woman creates after the pattern of her own type, since she furnishes every corpuscle of blood, every cell, every fibre of nerve, every element of human construction, consequently every phase of mentality and temperament from herself. Moreover with these she blends the inseparable prestige of man which she essentially shares. With this map of controlling influences before us in sickness we comprehend the most effective course for treatment of disordered functions. When I endeavor to steer an illness in a family over the safer course I set the compass of discrimination by the indications of the mother nature. It is she who bred the child through the media of her own body and mind. The children, all children, partake of the natural trend of the mother's diseases, the mother's impulses, emotions, vanities and passions, whether high or low in the estimate of morals. Therefore, when I administer to a case of any importance, I aim to view it from the mother aspect of the situation because the ovarian temperament bespeaks the trend of the mother production. Although the mother may have during the period of gestation filled her thought so full of the father that her offspring may present a likeness of him in features, yet the qualities of her temperament, her moral and intellectual ambitions, her individual propensities are perpetuated in offspring by herself.

Again, it is true that the observant boy, from association after birth, may unconsciously train to a resemblance of the characteristics of the father, but the bottom essentials of physical condition of health, of mental type and temperament are to compelling degree impart-

ed or developed by the mother. As conspicuous examples for illustration, I only need to refer to the heroism of the mother of Napoleon Bonaparte, the patriotism and fortitude of the mother of George Washington, the broad-minded sense, honest probity and sacrificial tenderness of the mother of the best known man in the world—Abraham Lincoln. We hear little of the fathers of these illustrious characters—history loves to linger at the shrines of their character-forming mothers. It is to Mrs. Caroline Hanks Hitchcock's faithful investigations that we are allowed to learn that the mother of Lincoln was a sweet-tempered, beautiful woman, illiterate as were her neighbors, "but with lots of hard sense, an abundance of industry and patience, and all the virtues that go to make up a good wife and mother—speaking out of the instincts of an unspoiled heart, she told her little boy Abraham that one of the meanest, lowest things in the world was a liar and a hypocrite, and one of the noblest was an honest man." And from the integrity of her own nature and spirit there grew the immortal President.

But alongside with the woman's ovarian temperament there trails an inseparable impress of man—impress only. According to the Biblical legend, woman was formed in the Garden of Eden from a rib of Adam, the father of the world. Adam or the Man was thus undoubtedly weakened in his masculine independence of nature, but became incontestably bound up in the interest and destiny of woman formed of a part of himself for himself as a sexual adjunct and domestic helpmeet. In this human compact of nature woman's component of rectitude or truthness to man should constitute man's protective fortress of moral attitude and safety, rather than that her lapse to frailty should become man's executioner. Woman, the ordained charmer of man, owes this ideal obligation to the world. But in abstract view, to the transcendent comfort that woman ideally is or may be to man's existence, there arise a startling array of exceptions where caprice and passion play their remorseful game on the natural propensities and provisional infirmities of man that dispose him to dalliance with the charming and magnetic personality of desirable woman so irrevocably linked with her because of man's share in giving to her existence the force and characteristics that are inseparable from the completion of himself in the zone of human life with its eventual gleanings of good and evil. The quality of the ovarian constitution physiologically and mentally disposes in woman the quality of her sexual tendencies, the recognition of her responsiveness to sexual appeal, of her appreciation of opportunities, sought or unsought, whether in the routine groove of legalized form or of access to more liberalized privilege. Her acceptance of her nature's promptings is not always so much a result of personal will or of personal won't by moral choice; it is obeying the appeal of nature working within herself, oftentimes so impressively that she will drop the rein of repression or self-abnegation in the open world of access to an admiring personality that solicits the reciprocation of the opposite sex for human comfort and personal advantages. It is not the whim of woman, nor the resistful will that sways her nature for or against a career that ends in thorns and widespread disaster.

On the higher plane of morals, in majority of in-

stances, it is the ovarian disposition which quickens the impulses of love and swings apart the gilded gates to the primrose paths that lead to the silken bonds of marriage and its important mission and obligations. But the revelations of the marriage history of society unfortunately demonstrate that contentment does not abide evenly in legalized nuptial relations, that the unity of choice wanes amid the flaming carnations of diversity, that the chaste aroma of the white rose of early attraction by and by grows faint in comparison with the pungent poppy of a new affinity. With the fluctuating transformation of unstable ovarian temperament there leans the mental pose of corresponding consent, and since woman came originally from the side of man she always finds in man a willingness to be drawn to her even by the winning glance of an eye, by the tender symbol of a sigh. Woman attracts, not by her flaunt of feathers and velvet, but by the mystic expression of her natural endowments. Through the laws of her nature her attracting graces are the reflex of her ovarian or sexual type. Without actual purpose she draws and leads man as by the magic of personal fascination—conquers by impulses that awaken desire for her. Originated by the handiwork of God from a rib of his own body, man is ever disposed to yield tribute to that which appeals to the element of passion through which he was brought into existence. As students of human nature, as medical philosophers, as agents of relief for the complicated discomforts of humanity, are we to apply our talents to the amelioration of the problems set for us, or are we to look merely after the physical anomalies of suffering? In a world dominated by an exhaustless array of temperaments, if we are not psychologists as well as prescribers of drugs, we are pigmies of the great healing art. Man esteems his love for woman as a sex the essence of his pride, the stimulus of his ambition, the mainspring of his prowess, the shrine of his devotion; but in too many instances it also becomes the mortal sting of his life, the thrust of his death. For when he is seeking woman he is seeking the absent element of himself—the rib he yearns for and hopes to re-attach in the woman's personality. In this desire he may suffer the chagrin of disappointment again and again. Therefore, when woman, because of her ovarian temperament, reaches for man, she spins her web of willingness, spreads her net of allurements—not of set purpose, but of nature—and makes her conquest. She may also crave for a succession of conquests. Wreckage, sorrow and death may strew the path of each. The woman did it not by the evil of vicious purpose, but by yielding to the tendency of ovarian impulse. As the world runs, sexual aberration will swing on the pendulum of vital forces in spite of prescribed moralizing ideals intended to elevate and beautify social integrity. It is rather the changing phases of woman's temperament that disposes her feet towards the paths of her ventures and experiences. It is seldom the sham deception of a whiff of champagne or the fake delusion of force unwelcomed!

A pertinent demonstration has been blazoned to the world from the New York court room, proving how an alluring young woman fluctuated, apparently voluntarily, from man to man and back again till the life of an accomplished art-loving architect was sacrificed

unto death in cold blood by an infatuated rival whom she had been led to bind to herself through the magic of her nature and personality. Was it she or her ovarian temperament that led to broadcast ruin of reputations, of family name and honor, of untold pecuniary fortune and mental suffering? Wretched as it has all proved to be, I believe that it would not be reasonable or charitable to charge the youthful charmer in the case with wilful purpose in strewing a trail of human wreckage behind her erratic career that has brought only disaster and misery as its bitter harvest. For what is in the nature compels the nature—or at least impels the operations of nature under tentative circumstances. If I prescribe for an erratic woman I prescribe for her ovarian temperament, as nearly as I can interpret it, if I hope to benefit her situation, or her relations to the world. Our drugs alone with their physical intent fall obtusely short of their proposed effects as curatives, unless we can adapt their physiological action upon the medium of temperament. Of course we allow how the mind and nervous manifestations hinge on temperament. To treat intelligently the physically afflicted, we must treat not only the stomach or the liver, etc., but superadd well directed relief of mind upon mind as the more important and remedial. I have met numerous instances in practice where the mind needed its especial therapeutic without the actual intervention of chemicals.

As doctors we are aware that woman's ovarian system, prior to her menopause, is subject to continuous and gradual action of physical change incident to the process of menstrual function. Therefore such woman is seldom two successive weeks in the same mood and tense of experience. Then who that is intelligent should be surprised that the woman is not every day of every successive month alike in disposition and manifestations as long as she lives? The whims of woman, for she is subject to spells of whims and emotions, if observantly studied, will be usually found to concurrently attend the ovarian phase of her situation. Her turns of irritability, her excessive strains of intense activities, her vibrations of nervous tension, her periodical ebullitions of personal and domestic dissatisfactions assume a storm level for an interval of hours or days and then subside to the calmer current of disposition—usually after the menses have passed their monthly turn of disquiet. Then should not our treatment always time itself with a recognition of the ovarian impulse then at hand? It may be about this period of nature's mystic procedure that intimations of sexual passion list toward the opposite or complementary sex. Unfortunate or luckless will be the man who has churlishly bruised the appreciation and sympathies of the woman while she was enduring the wound of her ovarian stress, which had bled because of her hurt that nature inflicted for deliverance to her life in preparation for the generating of another human being to a mission in the world. Woman of high and elastic spirit will not slavishly bear intolerance toward her inherited nature and yet love her oppressor. She will revolt against captious tyranny over assumed claims of personal privilege unsanctified by tender regard. Hence lucky and to be congratulated is the man to whom woman turns at precious moments the worship of her rewards for tender consideration and cherishing affection under the trials of her ovarian perturbation and fluctuating tempera-

ment, by reason of the inexorable crises in the ordeals of her sexual kingdom. It is this index of genial and considerate association, or its opposite, that points to connubial contentment and happiness on the one hand, or to personal estrangement between man and woman on the other hand. How are we to intelligently prescribe for illness caused by worry, by nerve strain, by tumult of ovarian temperament unless we recognize the delicate conditions that underlie the physical manifestations? Rhubarb and aloin will certainly not reach the requisites of the case. To the probable phosphates, the bromides, the valerianates and uterine specials there will certainly be needed skillful adaptation of a steady psychological impress to remedially balance each varying phase of the ovarian temperament.

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EXTERNAL HEMORRHOIDS AND ANAL AFFECTIONS.

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EXTERNAL pile tumors are usually considered as those that exist external to the sphincter ani and in their incipency are simple varicosities of the inferior venous plexus. External piles may be acute or chronic; the former is quite often of a thrombotic character, and the latter cutaneous. These external tumors are sometimes spoken of as "dry piles" and it is said that few persons reach the age of forty without suffering from them in some degree.

The predisposing causes of this, as well as the internal variety, are rather numerous. The somewhat imperfect anastomosis of the hemorrhoidal circulation is one of the strongest factors of causation. It is also thought that gravitation by the erect position is another cause, as man is the only animal affected by this disorder. Any prolonged pressure upon the inferior vena cava or iliac veins may be instrumental in bringing on piles. A gravid uterus, disease of the liver and various tumors may impede the circulation in these parts. Perhaps the most constant cause of piles is constipation and straining at stool. The patient usually finds that the tumor or tumors made their descent following a painful act of defecation in which scybala of a petrous character has been passed. If the tumor should not be relieved of its tension in a few days inflammation and ulceration may occur, with a great deal of suffering. A good deal of induration may follow the ulceration and the tissues about the base of the tumor may become hardened and thickened.

External hemorrhoids, as stated, have their origin in the subcutaneous vein near the anal margin, it being a branch of the hemorrhoidal plexus. It may be partially covered with mucous membrane, but it can not be retained above the sphincter. It should be borne in mind that internal piles are usually found co-existing with those of the external variety. The internal pile lies altogether within the sphincter, although it may protrude externally through the anus when pressure from above is supplied, as in straining at stool. The internal pile may be sessile or pedunculated. The external pile is usually pale in color. Its color, however, may vary considerably depending upon the stage and intensity of the trouble.

The formation of a pile is about as follows: A vein ruptures and there is an extravasation of blood from it into the soft tissues about the anus. The tumor may vary in size from a pea to a marble and now presents a rather bluish color. There is now considerable pain, due to the tension and swelling, and a certain degree of inflammation may follow. If the tumor is small, the serum is absorbed in a short time and the pile diminishes in size. If no ulceration results the pile becomes shrunken and very much changed in appearance, and is then known as a cutaneous hemorrhoid. A pile in its incipiency is therefore only a thrombus, and Dr. Drueck has stated that a thrombotic hemorrhoid if found on any other part of the body would be called a blood blister.

Thrombotic hemorrhoids usually make their appearance quickly. The treatment is simple and satisfactory, and will be considered under a general head. This variety of piles very often eventuate into a chronic state and are then usually spoken of as cutaneous hemorrhoids. They may exist singly or in multiple and are variable in size. If they are subjected to bad hygiene they may become irritated and give off a very offensive odor. If they become inflamed and congested, the patient may endure great suffering. Improper diet, sitting on damp ground and being on the feet an unusual length of time are especially inclined to aggravate matters with those subject to this disorder. Each succeeding attack leaves the tumors somewhat larger than before, with a greater development of connective tissue. There is usually little trouble in diagnosing hemorrhoids, although they must be differentiated from polypi, villous and malignant tumors, venereal warts, etc. Prolapsus of the anus or rectum is recognized by its shape, as well as the orifice and its mucous membrane. Fissure and ulcer of the anus and rectum may cause bleeding, which the laity are disposed to consider bleeding piles.

The treatment of external piles may be prophylactic or curative. The last may again be palliative or radical. The bowels should be kept open by a diet that will not cause irritation and the digestive function, especially the hepatic, should always be well maintained. Aloes and such cathartics as produce irritation of the lower bowels should be carefully avoided. Teaspoonful doses of equal parts of sulphur and cream of tartar taken occasionally will produce soft pultaceous stools, and the sulphur has a very salutary effect upon the rectal mucosa.

If the patient is in the throes of an acute attack there should be an attempt made to return the mass within the anus. This is best favored by the patient assuming the knee-chest position. Applications of ice relieve the congestion and accelerate their reduction. If cold does not produce the results we would hope to obtain from it, moist heat may then be tried. If something along this line is to be tried perhaps a flax-seed poultice applied hot and often will give as gratifying results as anything. Slippery elm employed in the same way is a favorite with many, and may be depended upon to be appreciated by the patient. Leeches are serviceable, but they are seldom available in private practice. An opium or morphine suppository is usually indicated and may afford much relief. It takes some little time, however, for them to act as sedation must come mainly

from the effect upon the brain. The pain is caused by the increased tension and not by the hyperesthesia of excoriated nerve-endings, as in fissure or ulcer of the anus. Hence the value of local depletion by hot or cold.

Should there be thrombotic tumors or blood clots these must be incised and the clot turned out. If there is considerable hemorrhage it may be controlled by heat and compression, and in severe cases by touching with chloride of iron or a 1-1000 adrenalin solution. A dusting powder may also be used, say equal parts of calomel and tannin.

Sloughing piles are best treated by poultices until the inflammatory action has subsided. After cleansing the parts with warm carbolized water the following sedative-astringent application will be found quite useful:

Ichthyol5i
Gallic acid5i
Carbolic acid5i
Tr. belladonna5i

This should be made into an ointment with fresh pine tar. It is a soothing application and always gives good results, although not an æsthetic mixture by any means. A 4 per cent. solution of cocaine may be applied to piles before excising them. Sometimes painful piles are better relieved by a solution than an ointment, in which the following is serviceable. The parts should first be cleansed with warm water and peroxide of hydrogen:

R

Tr. Opium5ii
Tr. Belladonna5ii
Glycerin5iv

Rectal injections of warm and cold water alternately relieve the congestion in acute cases and give tone to the parts in sub-acute or chronic cases. Hot water is preferable for its cleansing and detergent effects, but cold gives tone and strength in a better manner. Should there be considerable relaxation or a tendency toward hemorrhage, astringents should be combined with the water freely. Hamamelis, pinus canadensis, tannin, or even alum, supply all that could be desired in the way of astringents. Copious enemas should especially be used before other remedial applications are made.

Every source of irritation should be so far as possible removed, and the parts kept so nearly aseptic as the location will permit. It is better to keep a recumbent position while an acute attack is on, and the toilet should be made with clean, soft paper, or with absorbent cotton moistened in some mild antiseptic fluid. The bowels should be moved by sulphur and cream of tartar or olive oil, and perhaps occasionally by injections of water from slippery elm. As an after-thought I wish to say that too much dependence must not be placed in local anodynes in congested, inflamed and painful piles. Remedies of this class sometimes seem to aggravate matters. However, those that have been named are about the most dependable ones at our command. Conium suppositories usually give relief, at least in some measure, but its action, like that of morphine, may be more systemic than local. In piles of the thrombotic variety, it should be remembered that nothing gives such prompt relief as incision and evacuation of their contents. Inflamed piles containing no clot should not be subjected to any radical treatment until the inflammation has abated.

Opinions differ in regard to the treatment directed

toward permanent relief of external piles. This is to be determined upon after active inflammation in the tumors has subsided. If the tumors are old and desiccated they may be simply snipped off with scissors curved on the flat. Hemorrhage may be arrested in the manner above named. It is the consensus of opinion that the ligature is seldom required for this form of hemorrhoids. When, however, they are large and this method of removal is thought desirable, the operation may be made almost painless by filling the tumor with 1 per cent. solution of cocaine to which has been added a little adrenalin, 1 to 1000. First inject a few drops to a depth of about 1-8 inch and leave a few minutes until an area is rendered anesthetic. Then inject a little farther, waiting a few minutes again until the parts are numb, and so on until the tumor is practically devoid of feeling. When the pile is cut off the edges of the wound should be approximated with a few stitches of catgut. An absorbent dressing should be applied. Should there be an inflamed condition present when a pile is thus treated it is likely to occasion a good deal of pain, and if too much tissue is removed there is danger of stricture of the anus as cicatrization develops.

Electrolysis may be successfully employed in removing piles of the varicose variety, but not the thrombotic and skin tabs. The positive pole of a galvanic battery may be attached to a needle which penetrates the base of the tumor. The current should be of sufficient strength and duration to strangle the circulation, which will be evidenced by change of color of the tumor, after which obliteration takes place in a few days. The actual cautery has many adherents.

The injection method seems to be gaining favor with the profession all the time, and especially appeals to physicians who are lacking in surgical equipments and technique, as those living in small towns and rural districts. It is true that obliteration of piles by this method may not always be successful in the highest degree, and there may be recurrences or the formation of new tumors. Any other method is open to these same objections. One point that especially recommends the method of injection is that it strikes less terror to the patient than any other procedure that can be named, and he will submit to it when he would to none other.

It requires careful observation to know what tumors may be eradicated by this method. Hard formations at the muco-cutaneous line are not suitable for this method; neither are the cutaneous folds and hypertrophied skin that exist in this region. Tumors in this region should be removed by excision, and care should be observed not to injure more tissue than is necessary, or there might ensue a puckering process that would mar the function of the sphincters.

Of cauterizing injections for obliterating piles carbolic acid holds first place. There are other useful agents that may be employed alone or as an adjunct to it, but after all, carbolic acid does the work, and it would seem that no synergist is needed. A good deal has been said about poisoning and embolism resulting from the acid when used for this purpose. Such accidents may have occurred, but the writers know of none such to his personal knowledge. They were in all probability due to the employment of weak solutions which are the more readily taken up by the circulation, and are therefore attended by a modicum of danger.

The acid should be used in sufficient strength to strangle the circulation and coagulate the albumen in the tissues. If the circulation is thus throttled, there can be no absorption and no embolus can form. The worst that can happen when strong solutions are used is sloughing and ulceration, in which case the parts should be kept as clean as can be and treated along antiseptic lines. The following solution is quite efficient, and is easily and quickly prepared:

℞ Carbolic acid	95 per cent.
Glycerin	
Sterile water	aa3i

The quantity injected depends somewhat upon the size of the tumor. It may be ten drops, and sometimes more or less. The fluid should permeate every part of the tumor and should blanch it in a thorough manner. If there is a little escape of blood or serum on the withdrawal of the needle it is evidence that not enough of the fluid was injected, and more should be used. Two or three tumors may be treated at one time, provided they do not encroach too far upon the sphincter. The amount of after-pain will depend as much upon the sensitiveness of the patient as upon any morbid reactionary effect from the operation. Opium should be given to keep the bowels confined for three or four days after the treatment and to assuage whatever pains may arise. It is needless to state that the bowels should have been thoroughly evacuated before the operation. In the after treatment the parts should be kept clean, if not strictly aseptic, and the circulation well maintained by hot water bottles. It is better for the patient to remain in bed a few days, but in mild cases this may not be necessary.

The technique and many little points in operating must be learned by experience. In this, as elsewhere in the practice of medicine and surgery, a great deal depends upon attention to details of seemingly little importance. For instance, it is always well to anoint the parts around the site of injection with oil or vaselin to prevent excoriation by the fluid. When there is an overflow it should be immediately neutralized by swabbing with a little alcohol. It is usually better to have the patient on his side when operating and have the knees well drawn up, with the buttocks projecting over the edge of the table. An ordinary hypodermic syringe is all that is required, and the smallest needle that the fluid will pass through. It is necessary for the summit of the tumor to be as well impregnated with the fluid as the base; otherwise it may become severely inflamed and painful. As has been suggested, there should be no injections made about the muco-cutaneous line. The anesthetic effect of the carbolic acid lasts three or four hours, and by this time the anodyne given at the time of operating will begin to take effect. If the work has been done thoroughly, in less than a week the mass breaks down, leaving an excavation which usually heals readily. Subsequent treatments may be given in about two weeks or less time.

Pruritus ani may generally be regarded as a neurosis which is characterized by intolerable itching of the anus and adjacent parts. It is sometimes called itching piles, although no pile tumors may be in evidence. An oedematous condition of the anus may exist from rubbing the parts, and this may bear some resemblance to external hemorrhoids. The latter condition and *pruritus*

may coexist, in which the name, itching piles, would not be a misnomer.

While pruritus ani may be and often is classed in the category of neurotic affections, it is nevertheless of serious import, and usually rests upon a tangible basis. The itching is more or less constant, but is worse at night when the individual has retired and his body has become warm. The itching then extends to the thighs, buttocks and perineum. The scratching and chaffing indulged in by the sufferer affords only temporary relief, and tends to aggravate matters by making the parts sore and sensitive. So much rubbing to relieve the intense itching in time renders the skin about the anus and perineum tough and leathery and of brownish color. An eczematous condition may be engrafted upon the one now existing.

This distressing disorder afflicts both children and adults and males and females. It is more common in men of middle age, and especially corpulent men, in whom there is considerable erythema and sweating in the cleft of the buttocks. It occurs in all ranks and stations of life. It really seems that it is seen oftener in those whose business or social duties require them to be much seen and heard. Aside from the suffering it engenders, it occasions no little embarrassment from an esthetic standpoint. When the ailment occurs in a severe form sleep is impossible without the use of strong sedatives, employed either locally or internally. Too often the patient falls the victim of some narcotic habit. Even when he is asleep he is likely to dig at the parts involved, and thus creates an artificial lesion. If he does not in due time get permanent relief he becomes despondent, unfit for business, and begins to look at life from a very pessimistic angle. He may become a nervous or mental wreck, and it is no uncommon thing for a confirmed sufferer to contemplate self-destruction if he sees no hope of relief. So we should regard this affection with the importance that it demands in view of its possible far-reaching consequences.

The etiology here is of the utmost importance, as upon it depends our hope of successful treatment. In no disease is the overworked and usually meaningless phrase "remove the cause" of greater moment than in pruritus ani. The cause may be any one of a hundred different things, or there may be slight elements of causation from a great many sources. These may be tangible or intangible, seen or unseeable. (Just coined that word.) Chaffing of the buttocks has been mentioned. Visceral irritations of various kinds may be the cause, and the influence may be exerted reflexly, mechanically or chemically. One authority assigns the cause in many cases to an irritation of the end-organs of the sensory nerves from over-distention in the act of defecation.

Fissures and fistulas are among the more common causes and these are very frequently overlooked. When they are found the treatment is obvious. There may be a leak from a fistula whose orifice may not be larger than the point of a pin, but the constant oozing and deposit of an acrid secretion may form a crust that acts as a tiny lance. Thread-worms are often found in children, less frequently in adults. They are recognized by their thread-like appearance in the folds of tissues. Other worms and even pediculi have been discovered to be the source of irritation. Likewise, a few inverted hairs. Internal piles

and other tumors, as polypi; also proctitis, prostatitis, vaginitis and inflammation of approximate organs, may all be factors of causation. Cystitis and incontinence of urine is sometimes a cause in children and very old people. Constipation is usually a concomitant feature, but it is difficult to say to what extent it concerns etiology, since constipation is so very common. Pregnancy is one of the constant causes and its influence may be exerted both in a mechanical and a systemic manner.

A great many constitutional diseases and dyscrasias may be at the bottom of the trouble. It would be a matter of speculation to say how these operate, but they are nevertheless found to exist in many cases. Among these we may mention lithemia and the uric acid condition, diabetes, syphilis, tuberculosis, rachitis, albumenuria, faulty metabolism, etc. The individual may have an idiosyncrasy for certain articles of diet, such as strawberries, salt meats and certain kinds of fish, and to indulge even moderately in any one of these may mean to invite trouble. Often, however, no definite lesion or basis can be found, and the case would then be labeled "idiopathic," which usually is equivalent to "I don't know."

A diversified therapy may be required in the treatment. If it is but the well-marked expression of a neurosis tonics like arsenic, quinine and hypophosphites may be indicated and useful. In the absence of a specific cause the treatment should be begun by keeping the bowels open with calomel and salines. As a tentative procedure, ten grains of iodide of potassium may be given three times a day. The alternative treatment may apparently aggravate the case for a week or so, but benign results may follow later. The diet should be looked into and regulated as thought best. It may often be best to interdict coffee, alcohol, meats and certain spices and condiments. If there is indigestion it must be corrected by mineral acids or such other remedies as seem indicated. The hepatic function often needs stimulating. Constipation should be religiously combated and every secretion and function made as nearly right as possible. The genito-urinary tract in both sexes should have careful scrutiny for anything abnormal. Some cases depend upon an autoinfection from the intestinal canal, in which case salol and the sulphocarbolates will do good. The value of saline cathartics must not be overlooked. It may be well to lavage the colon occasionally, as impacted feces and their absorption and irritation together help to produce the trouble. If the uric acid diathesis be present the salicylates and alkalies should be given in ascending doses.

The parts should be kept dry and clean and no newspaper or other unclean article should be used for toilet purposes. They should be bathed frequently in cold water to which a generous quantity of oatmeal has been added. Dusting powders should be used freely, lycopodium or subgallate of bismuth being among the best. Perhaps many of the powders more or less proprietary in character are very useful. Boric acid should not be used if the anus is raw, as it seems to develop a certain amount of excoriation. The under-clothing should be of light weight and texture and should fit loosely about the perineum. The patient should sleep between sheets and the bed covering should

be no warmer or heavier than is really needed. All friction must be obviated and the parts kept dry and cool.

If there is a fissure it should be healed up. If there is a fistula it should be obliterated by incision with careful dissection of all the fibrous tissue, allowing the wound to granulate from the bottom. This is the operation that is most uniformly successful. If thread-worms are present an injection per rectum of salt water or a weak solution of quinine may be all that is required. An anthelmintic may also be given. If there is a vaginitis with discharge, a douche of bichloride of mercury, say 1-2000, may be used along with other appropriate treatment. If cystitis is present, boracic acid internally and as an irrigation may serve a useful purpose.

There are many antipruritic remedies, but they should be well chosen and judiciously employed lest they produce excoriation of the cuticle. One of the best is fresh pine tar. It may be used alone or in combination. An ointment made of the homely trio, tar, glycerine and starch, gives very gratifying results. It should be applied freely and the legs kept separated by a T-bandage. This mixture not only allays the itching, but seems to exert a certain curative effect as well. If something a little stronger, and incidentally a bit more elegant, is desired the following will not prove disappointing: Make a saturated solution of gum camphor in pure carbolic acid. Add an equal part of alcohol and you have an application that stops the itching at once. It should be brushed lightly over the affected area and repeated as needed. The solution is not irritating, as the raw edge is taken off the carbolic acid when it becomes soluble. Chloroform may be used instead of alcohol with about the same effects.

Should the case prove quite intractable, touch lightly a few times with a 20 per cent. solution of nitrate of silver. The burn is superficial and the nerve-endings are sealed up for a time. Other cauterizing agents have been employed, but the silver solution perhaps possesses certain advantages over other agents of this class. Ointments containing carbolic acid, chloroform, etc., may usually be depended upon to give some temporary relief, but as a general rule ointments are not so satisfactory as powders and liquids. However, when a pultaceous mixture, say the tar ointment, can be used in generous quantity the results are generally good. As a radical procedure divulsion of the sphincter is curative in many obstinate cases. This is to be done digitally and without anesthesia. Insert both thumbs in the anus, the dorsal sides directed latterly, and apply as much force as the sphincter will seemingly tolerate. This should be done slowly and at a number of sittings. The stretchings seem to have their beneficent effects in overcoming the hyperesthetic condition of the anal tissues. It gives new tone and life to the anus and overcomes any immediate reflex, as well as curing constipation.

Anal eczema may exist without the form of pruritus just described. If the terrible itching should be manifest in eczema of the anus it would be a difficult matter to differentiate it from pruritus ani, since the latter has itching for its dominant symptom. The itching of the anus in eczema is not invariably present, at least not always in the degree that characterizes pruritus.

The treatment may be in many respects parallel. If the skin is dry and scaly an application of tar in alcohol is very useful. Also an ointment composed of tar, belladonna and carbolic acid in a lanolin base. If there is a hypertrophy of the epidermis with scales, green soap should be used occasionally. If there is a weeping condition, powders may act kindly. Bismuth is one of the best; compound stearate of zinc, starch and many others are usually satisfactory. If the case is old and the tissues somewhat indurated it is well to touch the parts lightly with sulphurous acid. Citrine ointment is also very useful in chronic cases. There are dozens of different ointments and preparations used for this disease, but those mentioned here and under pruritus are likely to be all that will be required. Old cases may require stimulation; those more recent should have treatment more soothing and benign. The tissues should never be subjected to harsh and irritating procedures at any stage. Cleanliness and the removal of irritation will permit many cases to recover. Systemic defects should be corrected and anything about the dietary that is wrong should be remedied. Piles, fissures and fistulas should of course be treated if present. Potassium iodide and arsenic have given the writer good results in all types of eczema after the patient comes fully under the systemic effects of the drugs. Powders usually do better than ointments, although the latter may prove effective when all else fails. Lead and zinc ointments are among the best. The following is also good when it is desired to give the patient something clean, soothing and antipruritic:

R Calomelgrs. xxx
Mentholgrs. xx
Vaselin3i
Mix—Use as needed.

Prolapsus ani occurs more frequently in children than in adults. When occurring in the latter it is usually the result of pile tumors becoming congested and swollen. Drastic purgatives, like aloes, may cause prolapse of the anus in persons whose tissues are lacking in vital tone, as sufferers from tuberculosis. *Prolapsus ani* may exist alone or be associated with descent of the rectum.

The anus is to be pushed back within the grasp of the sphincters by the fingers crowded together at the tips so as to form a cone. The reduction in children is at times a difficult matter and considerable pressure may be needed to press out some of the blood and to overcome the struggling and resistance of the patient. It is best to place the child across the nurse's lap with the head very low in order to get the aid of gravitation. Another method is to lubricate the index finger and pass it into the anus and press upward as if making a rectal examination. The prolapsed mass usually retreats quite readily. A small pad of dry lint may then be placed over the anus and the buttocks strapped together by broad strips of adhesive plaster or a binder may be applied to the pelvis.

In severe cases this method is commendable: Envelop the index finger with a piece of lint and insert it in the lumen of the prolapsed mass. As the finger is pushed upward the dry lint adheres to the mucous membrane and assists reduction. The finger should then be slipped out leaving the lint within the bowel

temporarily. This procedure may be especially indicated when the rectum is involved. In mild cases the injection of a little very cold water may be all that is required. Defecation should so far as possible, take place while the patient is lying on his side. It is best to move the bowels with injections of warm water or oil.

The cause of relapse is to be carefully investigated. There may be irritation from several sources in the pelvic region. The most common cause in adults being piles, the patient should always be warned to return the mass after each evacuation. When the condition of the parts warrants an operation for their removal the prolapse is effectually cured. As a palliative remedy, cold spongings are very valuable, as well as the injection of a very little water that is nearly ice-cold. Stricture of the rectum or urethra, enlarged prostate, calculus in the bladder, or a polypus in the rectum or bladder, may be causes requiring surgical interference.

In children an improved hygiene is all that many cases require. If worms are present they may be expelled by injections of salt water. If there is emaciation and malnutrition good feeding and cod liver oil may do much good. It is very important to endeavor to restore the cushions of fat in the ischio-rectal fossae as absence of it doubtless facilitates the descent of the anus and rectum. There should be no straining at stool. Sulphur is the ideal laxative. Small, irreducible prolapses may be removed in the same way as if they were a ring of protruding internal piles. The continuous current is useful in restoring tone to the muscular fibres. Strong astringents may be of service even in chronic cases. Among these are solutions of tannin, oak bark, alum, hydrastis, chloride of lime and nitrate of silver. A small piece of ice may occasionally be inserted just beyond the sphincter. When the rectum is also prolapsed ergot is a very valuable remedy. It may be injected in the quantity that will be the most easily retained. Some observers state that the prolapse in children following diarrhea is well treated by injecting two drams of glycerine. Glycerine being a very hygroscopic agent the tissues are in some measure depleted by it. In chronic cases where a considerable portion of the rectum is down a plug of lint or gauze or a small inflated rubber pad may be used and retained by a T-bandage or tapes fastened to the shoulders.

Stronger cauterizing agents than any thus far named have been used on the prolapsed anal mass. Fuming nitric acid has been employed with gratifying reports, but it is an agent that might produce much pain and suffering if not used judiciously. The thermo-cautery has also been successfully used when the mass involves only the anus. The object that is desired by radical measures is to excite inflammation in the submucous tissue so as to bind the mucous and muscular coats together in order to prevent the initial slipping which is the chief cause of the affection. Excision of portions of the prolapsed mucous membrane may be performed so as to lead to contraction after cicatrization. Very severe cases involving the rectum may require a resection of a portion of the mucous membrane in order to reduce the dimensions of the bowel.

Fistula in ano may usually be regarded as a surgical

ailment. Occasionally the tract may be obliterated by the insertion of probes dipped in a strong solution of chloride of zinc or pure carbolic acid. Nitrate of silver causes so much pain and inflammation that it should not be used. The galvano-cautery may effect a cure. Whatever treatment is employed must embrace free drainage or healing cannot take place. In persons suffering from severe and wasting disease where a radical operation is contraindicated another procedure that may be followed by good results is the insertion of a little plug of gutta percha, shaped by the fingers like a miniature mushroom. The stem is pushed into the fistula and the flattened head kept in place by a little plaster. This dilates the orifice and allows pus to escape. This line of treatment if carried out persistently may prove successful in a goodly number of otherwise inoperable cases.

Anal fissure may be successfully treated by cauterization with drugs, the thermo-cautery or the knife. A great many physicians are curing this condition by digital dilatation of the sphincter either with or without anesthesia.

THE MEDICAL EDUCATION AND DEGREE.

BY FLAVEL S. THOMAS, M.D., HANSON, MASS.

WALT WHITMAN in beginning "Leaves of Grass" said, "I celebrate myself." Before I finish reading this paper you may think I have written it to celebrate myself. Certainly it will contain much egoism which, at times, may merge into egotism.

In writing about medical education, I thought it would be more interesting to tell you what I had seen and heard, rather than to tell you of something I had read up in some history of medicine.

I am getting to be something of a patriarch in medicine. I began the study of medicine thirty-six years ago. Thirty-six years ago some of the members of this club were not born. It is hard for me to realize this, and that, with one or two exceptions, I am the oldest member of this club.

In thirty-six years one should have seen, heard and made considerable medical biography and history. Therefore, in this paper, my egotism may surpass that of Walt Whitman. But if I can write as strongly, as effectively, you will forgive me as he is being forgiven.

Having recently completed the reading of "The History of Science," in five volumes, by H. S. Williams, M.D., I could easily write about the very incipency of medicine. I do not care to go back that far.

Years ago, long before I came upon the stage, medical students studied with physicians, the same as law students now study in a lawyer's office. The student could use the preceptor's books, see practice and assist, and gradually take charge of cases. Some prominent physicians would have quite a number of students, with dissecting-rooms, etc. Where the preceptor was learned, skillful, enthusiastic and faithful, the student must have received a good preparation for his profession. This close contact with teacher and practice must have been very valuable. This was largely lost and missed in the evolution of medical education in its later stages.

When I began the study of medicine, and for many

years after, the requirements in most medical schools were, that the student must be in the hand of a preceptor three years, attend two courses of lectures and pass the final examinations. Sometimes the preceptor was good and sometimes he was very bad. The course of lectures was four or five months long and was the same each year. So the second year was just a repetition of the lectures of the first year.

The final examinations were oral. The seven professors of the seven branches were seated in various parts of a large room. A student would be called by an attendant and take his place before the first examiner, who would ask him a few questions. In this way the candidate would pass from examiner to examiner until he completed the line or circle. If successful in four of the seven branches, he was allowed to graduate. A physician, who graduated under this system, told me that he did not feel any interest in medical chemistry, and did not study it at all, knowing that he could afford to flunk in at least this branch. Many schools had no clinical advantages worth mentioning. The medical school was a private money-making scheme. The great ambition of the promoters and teachers was to get the largest number of students possible, collect all the lecture fees possible, and to pose before the public as learned and skillful college professors. I will not say that there were not some enthusiasts, some altruists.

Two years before I entered Harvard Medical School, Charles W. Eliot was elected president of Harvard University. One of the first things he did was to take a leading and very active part in the reorganization and administration of the medical school. He was a real president of every part of the university, and he transformed the medical school from a detached side-show to a real part of the university; a real part of its body and soul, and it has remained a real part and is now the best part.

When I entered Harvard Medical School an entrance examination was required. There was a graded course of three years, and the candidate for the degree had to pass every one of the examinations. The examinations were partly practical and partly written. I think there were ten or twelve: several at the end of each year. One of these examinations, surgery or theory and practice, for instance, would cover very thoroughly the ground now covered by several branches or examinations.

The school then was on North Grove street. The buildings backed into the yard of the Massachusetts General Hospital. We had good teachers. As good and famous as those of the present day. We had Oliver Wendell Holmes in anatomy; Charles B. Porter and H. H. A. Beach were demonstrators. Henry J. Bigelow and David W. Cheever gave us surgery. The present Professor Warren was just beginning as instructor in surgery. J. B. S. Jackson taught pathology, assisted by R. H. Fitz. We had Ellis, Minot and Shattuck in theory and practice, Wood in chemistry; and many other good teachers.

Of course we did not have laboratory work to the extent that is now in use, but we had it in anatomy, pathology, chemistry and in medical chemistry. We had recitations, clinical conferences, visited the many hospitals, took obstetric cases in various parts of the city; and many took a year or more in some hospital. I heard little or nothing about the diseases of women, except

what we got in connection with obstetrics. There was no such thing as bacteriology.

When I graduated I felt there were many things that I did not know, much that I must learn. I felt that I had studied medicine as a trade, rather than as a profession. One who studies one machine has a trade; one who studies the science of all machines has a profession. I had merely studied the human machine. I had felt the need of a knowledge of comparative or philosophical anatomy, physiology, pathology. Thirty years later Harvard Medical School felt this need and established a \$100,000 professorship in each of these branches. The professorship of Comparative Pathology has recently received an additional endowment of \$100,000.

I looked about and decided that Cornell University was the place for me. I went to Cornell soon after graduation, and took up zoology, comparative anatomy, comparative physiology and comparative pathology with Professors Gage, Law and Wilder.

For the next five years I practiced medicine a part of the time to get money, and some part of the time I spent in the study of comparative medicine. For six months in 1877-8 I was in the Boston Museum of Natural History with Hyatt and VanVleck. I was assistant curator and laboratory student. I also attended the Boston University and Institute of Technology lectures given in the lecture-room of the museum by Hyatt and Van Vleck.

Yet I was not satisfied. The academic year of 1878-9 I spent in Montreal at McGill University. I studied in the college department, in the medical school and in the school of veterinary or comparative medicine. Sir William Dawson, the famous scientist, gave us botany and zoology, and Dr. Osler gave us physiology and pathology. Of course we had other teachers, but these I especially remember. Osler was very common and companionable with the students, and I am proud to say that I have his name on my diploma. Dr. Osler has had a wonderful career. In 1884 he was called to the University of Pennsylvania, in 1889 to Johns Hopkins; and in 1905 was made Regius Professor of Medicine at Oxford. He has received Doctor of Science from Oxford, and LL.D. from McGill, Toronto, Edinburgh, Aberdeen, Yale and Harvard. He is a F. R. C. P., and a F. R. S.

Lea Brothers & Co. are about publishing "Modern Medicine," by Osler. It will be in seven volumes of about one thousand pages each, edited and partly written by Dr. Osler, assisted chiefly by Pennsylvania, Johns Hopkins, Harvard and McGill professors. Without a doubt it will be the best thing of the kind ever produced. It will be his life's greatest work, the capstone, the condensation of a life of deep study and wide experience, the final, the monumental work of the most famous, the greatest physician in the entire world.

At that time McGill had a higher standard than Harvard. Harvard has since taken the lead, but McGill is close behind.

As you will see, my interest was largely in comparative or philosophical medicine. About this time I read papers before the Plymouth County branch of the Massachusetts Medical Society on "The Importance of a Knowledge of Comparative Anatomy to the Doctor of Medicine," and "The Importance of a Knowledge

of Comparative Pathology to a Doctor of Medicine." Harvard has now endorsed my essays and views by establishing professorships and by selecting some of her best men to fill these chairs.

I have not given you this as the education of an ideal physician, an ideal education of a physician or the best method of getting a medical education. It is presented simply as the way that one physician got a part of his education. This did not complete my education. It was simply the beginning, the foundation. I have learned more since than I had learned at that time. Much of the practical part that I learned, I have had to unlearn and learn something in its place perhaps to unlearn later. I have no expectation of ever completing my medical education. It should be a life-long study.

The next few years I devoted to a study of the medical education, to the planning out of an education that would be ideal; and I earnestly enlisted in the war for a higher standard in both medical education and degree. To trace my footsteps I will give a list of some of my writings along this line.

I have already mentioned my essays on "The Importance of a Knowledge of Comparative Anatomy to the Doctor of Medicine" and "The Importance of a Knowledge of Comparative Pathology to a Doctor of Medicine." The following appeared in medical and educational journals: "M.D.: What It Is and What It Should Be," *New England Medical Monthly*, January, 1884. "The Ideal Medical School," *New England Medical Monthly*, December, 1884. "Medical Education," *New England Medical Monthly*, October, 1885. "The Best Preliminary Education for the Study of Medicine," *New England Medical Monthly*, 1886. "A Few Words to Medical Schools," *New England Medical Monthly*, May, 1887. "The Lecture System," *Boston Medical and Surgical Journal*, April, 1885. "The Physician," *Boston Journal of Health*, November, 1887. "The Best Course of Study Preparatory to the Study of Medicine," *The American Journal of Education*, October 16, and November 9, 1893.

My ideals have become reals. Perhaps my work had nothing to do with the ultimate success, yet it is a pleasure to think that I took a very active part in a fight which resulted in such a grand victory.

The medical school was largely a private, money-making institution. The course and degree were despised by college men. M.D., which should have been a graduate degree was not worth half as much as the Bachelor of Arts degree. At Harvard it has gradually been lifted up to equal B.A., then M.A., and then Ph.D. And yet, we have not reached perfection. Most schools need more thorough entrance requirements. Before entering a medical school a student should have graduated at a high school and then have received one or two years of scientific training. His hands, eyes, and brain should have received at least a preliminary training before he enters a professional school.

If possible, a medical education should begin in the high school. Here the student should take Latin, French, German, drawing, zoology, physics, physiology, chemistry and botany. Then he should enter college and take zoology, physics, physiology, chemistry, comparative anatomy, anatomical technology, microscopic technology, philosophy of science and the history of science.

Of course the student would take other studies in the high school and college; and of course the physiology and the comparative anatomy are merely preliminary and preparatory.

Johns Hopkins and Harvard now require the candidate for admission to hold a Bachelor degree. This is good and in the right direction, but it is not perfection. Certainly a Doctorate should be conferred only on such as hold a Bachelor degree. And yet, the student who has taken the high school course I have suggested and one or two years of the suggested college course, is better prepared to take up the study of medicine than the Bachelor of Arts, who has devoted eight years to Latin, Greek, mathematics, moral philosophy and theology. Not only does this Bachelor of Arts lack much essential knowledge and training, but his studies and training and age unfit him to take up the study of medicine. Therefore, we need to do more—and perhaps less—than require a Bachelor degree.

While all must feel like commending Harvard and the high standard, yet here we have not perfection. The combined course is too long. It costs too much in money and time. A man is too old before he can earn a living and be of service to the world. I do not see how a man, who is not rich, can now win the Harvard degree.

Harvard and other universities realize this difficulty and are trying to overcome it without lowering the real standard. At Harvard college at the present time, one, if he has the ability to complete the seventeen courses in three years, is allowed to do so. One is also allowed credit for work done in the summer school. Harvard Medical School has twenty-five scholarships that give some aid to poor students of first-class ability.

At Columbia, Syracuse, McGill and some other universities, the student is allowed to take a combined course, which earns a Bachelor and a Doctor degree in six years; the Bachelor at the end of the fourth year and the Doctor at the end of the sixth. The first two years are largely medical preparatory. The student enters the medical school at the beginning of the third year.

I will suggest that our universities offer a course as follows: Require a high school course such as I have suggested. Upon the completion of a college course of two years—largely medical preparatory—confer the degree of M.B. Upon the completion of the four years' course in the medical school give the degree of Master of Medicine. And upon the completion of a post-graduate year devoted to hospital or research work, confer Doctor of Medicine.

Some may object that I am making the entire education professional, that I am leaving out the liberal education. No studies are more liberalizing than these very studies that I have suggested; especially is this so with comparative anatomy, comparative physiology, comparative pathology. They give a depth, breadth, a height, a freedom of thought that was never received from the old college education.

Now a few words as to the course and methods in the medical school. Harvard has taken a step in the right direction in establishing professorships in comparative medicine. I am sure that one cannot understand human anatomy, physiology and pathology who has no knowledge of these as taught by comparative science. Without it, one has only a trade knowledge; with it, one has a professional knowledge. I

hope other schools will walk in Harvard's footsteps.

I think every medical school should have a professorship in the history of medicine, to prominently include medical biography. There should be a professorship of medical literature. A set of books, recently published, well covers this department and should be in the library of every physician. It is named, "The Doctor's Recreation Series," and is in twelve volumes, as follows: I, "The Doctor's Leisure Hour"; II, "The Doctor's Red Lamp"; III, "In the Year 1800"; IV, "The Book About Doctors"; V, "The Doctor's Window," poems; VI, "Passages from the Diary of a Late Physician"; VII, "The Inn of Rest"; VIII, "Doctors of the Old School"; IX, "The Shrine of Esculapius"; X, "The Doctor's Domicile"; XI, "A Cyclopedia of Medical History"; XII, "The Doctor's Who's Who."

Physicians and schools should avoid Chauvinism. Too often we think—perhaps loudly assert—that our theories and methods are right and all others are wrong. I am sure that there is at least some good in all methods. Many of our best methods originated with some person considered ignorant, perhaps a quack. In the medical college there should be a professor who should liberally study up and investigate and lecture on all new methods and schools, no matter how quackish they may seem.

We have dosimetry or alkalometry—which I use quite a bit—osteopathy, Christian Science, suggestion, hydrotherapy, the Hall system, the Dewey system, and many others. We have no right to turn a student out into the world without a knowledge of these, given by a large-hearted, liberal-minded man. There is an element of good in every one that should be sifted out and taken into our profession and work. It is our duty to seek and adopt every thing that will help us to serve humanity. This professor should fairly and justly show the student the chaff and the wheat.

Students should be given fewer lectures and more laboratory work; and more hospital and outside practice. The student should be made to do and do repeatedly, until he can do easily and skilfully the things he will be called upon to do as his life work.

We are coming more and more to realize that the healing power is not in the physician nor in the remedies, but in the body itself. The physician helps the forces in the body; some medicines help some, some do an immense amount of harm. We are depending more and more upon light, heat, cold, fresh air, water, electricity, exercise, suggestion, optimism, and the strong cheerful personality.

We are told by such men as Osler that in many of our most common diseases medicine has no special curative effect whatever.

Then, is there not coming a time when it would be absurd to confer the degree of Doctor of Medicine on a physician? Physician will be proper, being from physis, i. e., nature. A physician is a naturalist. What may seem like a step backward would really be a step forward. The degree of Bachelor of Physics was—many years ago—conferred upon physicians. Harvard may seem archaic in having Professors of Physics—now usually named Theory and Practice of Medicine—but it is becoming more and more appropriate. Why not make Physician the name of a degree, to be conferred upon the completion of a med-

ical course, or rather a course in Physics? The name of a profession is frequently used as the name of a degree—thus we have M.E., E.M., Met.E., C.E., A.C., P.C., V.S., etc. If a Doctorate degree is to be conferred, it should be Doctor of Man, that is in health and disease; Doctor of Humanity, Doctor of the Science of Health, or something of this kind.

At this time to write of medical education and not mention the new Harvard Medical Buildings, is like speaking of the Garden of Eden and not saying anything about Adam and Eve.

The school was on North Grove street until 1883, when what seemed an ideal building was erected on what seemed an ideal location on Boylston street, with Boston Public Library as a companion. It was supposed that the building question was settled for at least forty or fifty years. But within a few years a laboratory wing had to be added, and in a few years more it was seen that a new medical plant must be established.

When I learned that land had been bought on Longwood avenue I made a visit to the place. I found a somewhat rocky hillside pasture well stocked with cows. The land sloped down to Longwood avenue, and on the other side of the avenue the land sloped down to the Fens.

Somewhat later, at a meeting of the alumni, Dr. David W. Cheever exhibited plans for an ideal set of buildings. But to think of Harvard ever being able to erect such buildings was like thinking of the coming of the Kingdom of Heaven. I had a private talk with Dr. Cheever at the spread, and found that he had not much faith, saying, that "it might be realized in the remote future." Yet it could not have been more than a year or two before the foundations were being placed. I watched the work quite constantly from the foundation of the dedication.

Here we have a beautiful set of buildings of white marble, situated on a slope so that the administration building in the background is considerably higher than the street and the other buildings in front of it. A grand avenue of approach, one hundred feet wide, will be laid out, which will gradually ascend from Simmons College in the Fens to the included court. This avenue will be named Avenue Louis Pasteur in honor of, perhaps, the greatest scientist that ever lived. On each side of this avenue will be living-halls for the students. The plans for the first are completed and a dormitory of eighty-eight rooms is about to be erected.

There are five school buildings. As each of four of these consist of a pair, slightly connected, it might be more proper to say, nine buildings. Each is devoted to a special work or department. A prominent New York medical journal, in an editorial, contains this: "Architecturally, these buildings are the best collection in our country. Medically, they are the best equipped in the world."

There are twenty-six acres of land. The school buildings occupy but a small part of this. The rest is to be covered with hospitals of all kinds. The Good Samaritan has a new building here, the Deaconess is near, the great Brigham will be just back of the college grounds on Parker Hill, the highest land in Boston. On the grounds will be the Rotch Infants' Hospital; here also will be the new Children's and many others. Without a doubt it is to be the best med-

ical plant in the world.

As the last words—and may they be to you the master words in medicine—this, from President Eliot, the greatest, the grandest man in the world: "There are three things which education should always yield and which should inspire the continuous education in after-life—the passion for truth, the passion for service, and the sense that the satisfaction of these two passions will add infinitely to the enjoyment and happiness of living."

THE FUTURE OF MEDICINE.

A. D. HARD, M.D., MARSHALL, MINN.

IT is possible that Medicine is not an exact science simply because the fundamental principles have not been thoroughly worked out for practical application in thwarting death, the purpose of all sickness. Patients apply for relief from disagreeable symptoms much oftener than for efforts to remove the cause of sickness. Physicians naturally supply the demand, and we have become a set of pain relievers, cough stoppers, and humanity cobblers instead of skillful adjusters of conditions which naturally lead to health. It seems trite to assert that the purpose of pain is to warn the guiding mind of imminent bodily danger, and to urge helpful attention that the cause may be removed. It is the beseeching cry of a distressed nerve for help. Should we smother that cry with morphine?

The terrible cough that irritates and injures the delicate material of the lungs is Nature's laborious method of freeing the air passages of substances which obstruct perfect aeration of the life blood. Shall we stop the cough and aid Death by increasing that obstruction? An intestinal flux is calculated wisely to throw off substances which if left where they can be absorbed will act as toxic paralyzers of the great nerve centers of vital functions. Shall we stop the diarrhoea and assist this absorption of poisons?

These facts should direct our thoughts toward fundamental principles. In what way does disease injuriously affect the human body? It certainly is not by pain, cough or diarrhoea.

The common denominator of all sickness seems to be that the nerve centers which impell life action of vital organs are impeded in their function and inhibited in their action by substances which have gained access to the blood current, and instead of nourishing and furnishing combustible fuel for their normal power, debilitate, weaken and tend toward entire suspension of those stimuli which prompt the organs of vital function to do their necessary duty that life and good health may be conserved. We may call these injurious substances toxins.

An amateur physicist would promptly advise you to either limit the supply of these toxins, or counteract their effects on the nerve centers, or both, and the effect of almost all varieties of disease will be thwarted. This is a happy dream, and yet it is logical. We now possess various methods of more or less value for limiting the production and absorption of toxins, but there are many toxins which are chemically formed inside the blood current from substances which were inert when absorbed. There are other

toxins which are simply by-products of germ life and activity and cannot be reached for limiting purposes directly by any means now at our command.

Does not prophetic intuition suggest to your mind that we must call upon chemical science to furnish us something which we may introduce into the blood current to follow up, attack these toxins by the law of chemical affinity, and render them inert in regard to the nerve centers, and permit natural methods of bodily excretion to throw them off at leisure? This idea is not theoretically impractical. All toxic substances may be classed as organic compounds which are made up of an excessive amount of carbon in relation to the oxygen contained. The alkaloid strychnine is composed of $C_{21}O_2$, which with hydrogen and nitrogen constitute a very instable chemical compound, easily robbed of its excess of carbon by simple contact with it of any substance which has an excess of oxygen. When chemical equilibrium has been established we have two or more non-toxic compounds instead of the toxic strychnine. If this chemical transformation can be produced inside of the blood vessels, in the blood current, by sending in a toxin destroyer which will not use up all of its ability in attacking other substances, we can control the effects of all disease as far as interference with vital functions of organs is concerned. Calmette says that chloride of gold will rob snake venom of its excess of carbon and render it inert, either outside of the circulation or in it. Moore says that potassium permanganate will rob morphine of its excess of carbon and render it inert either outside the circulation or in it. Roux says that his diphtheria antitoxin will follow in the wake of the toxin of the Klebs-Loeffler bacilli and by chemical action in the circulation will render it inert.

Why, then, should we despair of finding some compound of an innocent nature containing an excess of oxygen, feebly combined so that when it comes in contact with another compound in which there is an excess of carbon feebly combined, a mutual interchange shall take place destroying the toxic nature of the compound containing the excess of carbon. I hold this to be a law.

Nature will cure all diseases of the body if toxins can be prevented from interfering with vital functions.

The opsonic-index of Wright is a beautiful confirmation of this idea, and when the science of medicine shall become perfect we shall only need to increase the phagocytic power, and render inert the toxins, and death from ordinary diseases will be recalled vaguely like the mental echoes of a disagreeable dream. May not this be the "Future of Medicine"?

Potatoes for the Diabetic.—Labbe (*La Presse Medicale*, Oct. 12, '07) has found the starch of potatoes to be tolerated much better by diabetics than any other form of starch, especially better than bread. An equal weight of potato starch contains between two and one-half and three times less carbohydrates than bread and therefore it may be given when bread is prohibited. Potatoes also allow the ingestion of large amounts of fat and can be cooked in a variety of palatable ways.

HOW TO TREAT A CARBUNCLE.

In the January number of *The Times* is a new method of treating carbuncles. "Textbooks invariably teach us how to abort carbuncles by injections; how to treat them by strapping with adhesive plaster, or how to cut them; but they fail to mention that all these remedies give little if any immediate relief from pain and consequently are somewhat unsatisfactory to the patient as well as the physician." Quoting from Dr. Reissman's paper. I have for a long time been treating carbuncles almost painlessly satisfactorily aborting them in every case. It is neither by puncture or incision or poultice. I have before presented it to the profession but it is probably so simple that they have overlooked it.

When the carbuncle is diagnosed or in a later stage, apply a plaster of gum opium. If that is not convenient powdered opium mixed with a little mercurial ointment (ung. hydr.). It relieves the pain and controls the inflammation and the increase in size. In two or three days a limited amount of supuration will take place and the small core come out.

The plaster should be placed early, but if considerable enlargement and induration has taken place, it will be just as soothing and effectual. The after treatment should be the thorough washing out of the cavity with a stream of water or an antiseptic solution. Healing begins at once. I have tested it in many cases and am certain of the result. The same treatment aborts boils upon which it was first tried. The sharp pain, the tension and formation of pus are prevented and the whole is over in a few days. Recently I had occasion to try the opium treatment on infected sores, presumably caused by the bites of some insect. The lumps soon pointed and a core of pus came out, leaving a little abscess that soon healed. Crude opium serves the purpose, but the cure is accelerated by mercurial ointment later on. Carbuncles are no longer formidable to me or troublesome to treat.

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Bacterial Skin Diseases.—Alderson (*Jour. Cutan. Dis.*, July, '07) believes that opsonic therapy has not been proved to produce good results in acne, furunculosis, sycosis, staphylococchia, lupus vulgaris or tuberculosis cutis, any more expeditiously than the methods which have been in vogue. Most cases treated by opsonic therapy extending over weeks and months have been much improved; relatively few were made entirely well. None of these cases have been reported by dermatologists, but by surgeons and general practitioners, who might easily misinterpret the clinical picture presented by certain skin diseases in their different phases. A patch of lupus vulgaris from which for instance, the crusts have been washed and over which superficial healing has taken place, might readily deceive the inexperienced observer. Opsonic treatment is undoubtedly valuable in certain chronic bacterial skin diseases; however, much auxiliary treatment, external and internal medication, dietetic and hygienic measures and means of producing local hyperemia, are necessary to produce the best results.

Valvular Heart Disease.—In the direct treatment of tricuspid regurgitation we proceed, as in mitral regurgitation, to diminish the resistance in the vessels and to increase the power of the heart; Rest is most essential, and alone will often suffice to restore equilibrium; it should at first be complete and in bed, and should be relaxed only as improvement becomes marked. Next comes digitalis, which acts as well on the right ventricle as on the left. In grave cases, states Crawford (*Practitioner*, June, '07), we give this drug, after a free initial purge to unload the veins, and combined with more rapidly-acting stimulants, such as strychnine, ammonia, or ether, to tide over the delay before its doses become effective. Calomel is the best purgative; it is diuretic in conditions of cardiac back-pressure. We give digitalis at first in small and gradually increasing doses so that the pulmonary circulation may have time to readjust itself to the increased power of the right ventricle; otherwise we may have a hæmoptysis to deal with. With this plan of treatment we shall find the circulation steadied, free diuresis set up and diminishing dropsy, with the disappearance of the murmur and the systolic venous pulse. Sometimes diuresis fails or is inadequate; then theobromine or caffeine may be given, with sodium salicylate. When there is a general dropsy all measures are apt to be ineffective until we do paracentesis of the abdomen or thorax or puncture or incise the feet and legs; upon this there usually follows a rapid increase in the urine output and a return of restful and comfortable sleep. In other cases, especially when dropsy is not conspicuous and when the strain on the right heart is so great that the patient becomes livid and in danger of suffocation, we must venesect, following this by such diffusible stimulants as ammonia and ether. In such cases we must fear also sleeplessness and vomiting, which are directly due to the venous stagnation. We must induce sleep. Crawford declares he has seen the end, in one or two cases, accelerated by morphine, but far more often by the dread of morphine. We are apt to be too fearful of this drug in conditions of urgent cardiac distress with restlessness and insomnia, and to let patients die of sheer exhaustion for want of sleep. We may give opium in a suppository; or morphine subcutaneously with strychnine. And we must have the courage to give an efficient dose. It is idle, in advanced cardiac cases to put one's trust in other hypnotics; under the latter there is habitually a night of disturbed delirium, followed by a day of tantalizing drowsiness. Vomiting is due to venous stagnation in the stomach; sometimes even the smallest amount of fluid is at once rejected. We must then cease to feed by the mouth, the portal circulation is to be unloaded. A large amount of saline will be rejected; a full dose of calomel, with an equal quantity of bicarbonate of soda, mixed in a dessert-spoonful of milk will probably be retained; after this the stomach will probably tolerate small amounts of peptonized milk. Rectal feeding is probably useless, as not being prompt enough. In all these cases, in which general anasarca is not a prominent feature) the enlarged liver is apt to cause much discomfort, and even pain, which may be relieved by free leeching over the liver, with a brisk purge.

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CAPITAL PUNISHMENT OF MENTALLY DEFECTIVE MURDERERS.

OUR attention is almost daily called to the problem of disposition of murderers, who show more or less plainly mental defects. In practically every case of homicide in which self-defense, absolute lack of intent to kill or other obvious excuse or justification is not manifest, the plea of insanity is either made or seriously contemplated by the defense. Neurology has also, within the last few years, recognized many phases of mental perturbation and deficiency, not generally recognized as constituting insanity. Thus, self-interest, on the part of the slayer and his family, abstruse scientific conclusions and humanity, have united to emphasize the importance of mental aberration in regard to the subsequent dealings of the State with the slayer.

Our caption is faulty in two respects; first, we believe that the legal killing of those who have killed their fellows should not primarily be regarded as punishment; secondly, the term *murderer* is not technically applicable to one who kills without intention, or full realization of the nature of the act.

Why do we put to death or sentence to life imprisonment those who have killed other men? Unquestionably, up to less than a century ago, the proper answer would have been to avenge a wrong. Indeed, even the word *revenge* might have been applicable. Unquestionably, too, there is a survival of this attitude in a large part of the community. According to this sentiment, the death penalty or that of life imprisonment may rightly be considered a punishment.

A broader spirited view of legal punishment of crime brings into prominence two other factors—reformation of the criminal and deterrent of potential criminals through fear of consequences. These

two factors are, however, less conspicuous in regard to manslaughter than in regard to any other crime. In the first place, popular sentiment always has and probably always will demand either actual death or the living death of permanent imprisonment for murderers as the term is commonly and not very accurately employed. Such punishment obviously renders reformation, except in the moral and religious sense as applied to one permanently removed from human society, out of the question. Again, in a large proportion of homicides, especially those to which the term murder is strictly applicable, the ultimate reason leading to the killing is so personal and so obsessive, that no penalty will deter anyone contemplating murder nor, on the other hand, will the lack of penalty predispose to crime.

Criminal acts in general may be classified as impersonal and personal. Those against property are, as a rule impersonal, at least when perpetrated for the immediate interests of the criminal. Very occasionally theft, burglary, etc., are committed as acts of revenge, but damage to property from personal motives usually takes the form of arson or other wanton destruction. So, too, perjury is usually committed in the immediate interest of the criminal and only rarely with the object of getting a particular individual into trouble. On the other hand, killing, assault, etc., is peculiarly frequent as an expression of personal hatred although we must also recognize such acts as dependent upon mental perversion—when they are rather apt to be associated with sexual perversion—in which an inexplicable pleasure is had in injury and death without regard to individuality of the victim; and as dependent upon other forms of criminality, usually dishonest acquisition of property. In the last group of cases, we must further distinguish the burglar, highwayman, etc., who kills merely incidentally, perhaps very reluctantly or even unintentionally, the one who combines dishonesty with cruelty and the one who happens to be actuated by personal malice.

Now, viewing the matter impartially, without either bitterness or sympathetic weakness, it seems to us that the sole excuse and justification of the death penalty is to remove permanently from human society an excessively dangerous member. Life imprisonment meets the same end but less certainly and less economically. On the other hand, the abolition of capital punishment marks a general elevation of the moral and religious tone of the community though we would not go so far as to advocate it.

To avoid confusion, let us eliminate all cases of manslaughter which are commonly recognized as justifiable—for instance self-defense either against actual assault or in dealing with burglars, etc.—or entirely unintentional and not due to criminal carelessness.

ness, or committed by persons at the time recognized as insane, non compos mentis—as in the case of young children who kill their companions in sport and without any realization of the nature of what they are doing, etc.

The remaining cases include a large group in which there is no reasonable danger of the repetition of the act further than that, having once usurped the functions of the judiciary, the perpetrator of the crime may rightly be considered liable to repeat the offense in the future. In many such instances, aside from the unwisdom of allowing any individual to usurp the prerogative of the whole people, public sentiment upholds him and regards his act as definitely useful. In many other instances, embarrassment is avoided by the immediate suicide of the slayer.

In a second large group, the slayer is a professional criminal, a menace and expense to the community even if he kills no one and there is no question that he should be put out of the way.

In a third group, to which we allude particularly, careful review of the case in retrospect, shows more or less mental warping of the slayer. For instance, Dr. S. Grover Burnet in the *Medical Fortnightly* of December 25, 1907, studies the histories of three criminal epileptics who have taken eleven lives. There has also recently occurred the second trial of Thaw, the defense concentrating their efforts on the plea of insanity, although apparently, no one had ever thought of him as insane prior to his killing of White.

At the risk of seeming brutal, we would advocate that, for this entire group of cases, the only safe rule is to regard capital punishment or its substitute, life imprisonment, not as a punishment in any true sense of the word, but as a means of ridding society of dangerous members. From this standpoint, it makes little difference whether we can make out a distinct mental warping or not. From the practical standpoint such cases are of greater danger to society than the unquestionably sane murderer who, without previous criminality and with deliberate purpose takes the law into his own hands and kills some individual against whom he has a bitter grudge. They are of even greater potential danger than the criminal who kills in the pursuit of burglary or highway robbery. The latter may be rendered honest by reformatory methods or the natural process of maturity, and if reformed so far as honesty is concerned he is not likely to commit murder again.

The great danger in the insanity plea with regard to murderers is that they will be discharged from custody as insane, while retaining the characteristics which have led them to commit the first murder. Even in custody in proper asylums, they remain a source of danger to companions and custodians.

Moreover, to take a particular instance, there is no reasonable question but that the acquittal of Thaw was on account of his financial resources, whereas, exactly the same circumstances repeated in low life would already have led to a conviction. Generally speaking it is exceedingly difficult, even impossible, to distinguish sharply between mere folly and lunacy, between a bad temper and a moral idiocy, between the immediate effects of alcohol and its permanent effect on the brain. Strictly speaking, it is illogical and unethical to hold a man accountable for criminal acts perpetrated while he is drunk. Men have been hanged for murders committed under the influence of alcohol, although they could not even remember the deed. Yet, as a matter of practical utility it seems impossible to consider drunkenness as an excuse for crime.

As an academic proposition, it is fairly questionable whether a person who is mentally normal can never kill either himself or others, yet, in the crude practical sense, we must recognize sane suicides and murderers. In many instances the question of insanity is not raised by the defense simply because the murderer does not wish to save his life or because there is no one to take sufficient interest in his defense.

There are obvious ethical difficulties in the way of allowing a state of affairs which will necessarily let wealth or influence play an important part on the disposition of criminals. It is equally unethical to allow the choice between capital punishment and imprisonment to rest in any sense with the murderer. If, on the other hand, capital punishment is abandoned, it is only a matter of a comparatively short time when we shall have undergoing life imprisonment hundreds of persons, perfectly sane, perfectly well disposed, virtually different in every way from the men condemned for murder—just as different, for example, as you and we are at our maturity or in our senility from the immature cubs we once were. What shall be done with these persons? It will be unjust to keep them in captivity. It will be sociologically uneconomic, for many murderers are men of ability and excellent qualities. If the pardoning power is exercised, we shall have the same play of financial and personal influence as in the original trial; we shall have under the present rule of gubernatorial discretion, displays of individual temperament varying from cold-bloodedness to maudlin sympathy. Mistakes will be made which will turn loose on the community crafty criminals who have nursed their vengeance for years and have covered it with a cloak of hypocrisy, or mental defectives who have shown apparent recovery under the routine of confinement.

We can see no simple and satisfactory way out of the dilemma but strongly incline to the idea that, in

the absence of ample justification, capital punishment, not as a matter of vengeance, but as a safeguard to society, is the best method of dealing with the slayer of man, without regard to impracticable refinements of neurology.

ANTI-VIVISECTION LEGISLATION.

OUR attention is called by a circular from a committee of the Medical Society of the State of New York to a petition being circulated in favor of a proposed bill intended further to restrict the practice of vivisection in the State. We would call the attention of our readers to the fact that a very careful consideration of the bill by competent medical authorities detects many defects and inconsistencies and that it is claimed that the present legislation on the subject is sufficient. Hence, we would advise physicians who are minded to sign the petition to read the bill carefully and to make sure that they are willing to subscribe to its contents.

However, we would also remind the profession that the time ought to be ripe for a reasonable law on this subject emanating from the profession itself, and carefully considering the whole matter of prevention of cruelty.

We do not agree with those who hold that the present legislation is adequate. On the one hand, the transportation of animals for slaughter and the ordinary agricultural practice of gelding, spaying, amputation of sheep's tails, trimming of dogs' ears, docking of horses, the shooting of so-called mad dogs by the police, and many other economic traumatism and killings of the lower animals, involve atrocious cruelty at unskilled hands and should be regulated so as to prevent the needless infliction of pain. In the aggregate, these economic cruelties to the lower animals involve many times the amount of pain involved in all experiments that can be considered vivisectional, even in the broadest sense of the term.

On the other hand, we are very far from the opinion that vivisection should be left to the discretion of purely scientific students, however disinterested their motives or whatever their institutional backing. In the aggregate, the amount of pain inflicted by irresponsible, individual vivisectioners, however unskilled and indifferent to suffering they may be, is insignificant compared with the organized, carefully planned, wholesale experimentation of men devoting their lives to such work, stimulated by ambition to devise new methods of research and to adduce ample evidence in point of numbers, in regard to any moot point in physiology, pathology or pharmacology, and liberally provided with material.

The claim, often made, that institutions such as

colleges and research laboratories should be given a free hand and that private individuals should be restricted in regard to vivisection or any other matter of investigation is a specious one. Without regard to the question of the infliction of cruelty, it seems to us that the practitioner of medicine, whose interest in a definite problem has been aroused to such an extent that he will sacrifice valuable time and undergo personal expense, is more likely to secure results of practical value to humanity than the salaried academic student of biology, providing that ability and opportunities for approximately equal grades of work are available. In this respect, our great institutions have been lamentably exclusive. Instead of showing a disposition to afford opportunities for research to private individuals, or even to follow suggestions emanating from them, they have almost uniformly closed both their doors and their ears and, in not a few instances, have adopted a supercilious attitude toward the unattached and occasional investigator.

In so far as license of institutions or premises for vivisection is concerned, it should be remembered that license in and of itself is absolutely without value. Control by license of any kind presupposes publicity and while the license of a saloon, slaughter house, etc., may prevent clandestine business on a small scale, it cannot possibly suppress anything done privately, and without commercial motives, though it may furnish material for occasional blackmail, persecution, or, rarely, for deserved punishment. So far as vivisection is concerned, it is folly to license an institution already in operation or to think that clandestine experimentation can be or that private investigation should be prevented.

Thus, it should be distinctly understood, both by vivisectionists and anti-vivisectionists, that the only kind of legislation which has any real significance, is that which controls institutions of research, more or less public, and subject to inspection.

A license which imposes no control is worse than useless. The present laws are ample to cover the case of the private vivisectioner who imposes needless cruelty on animals, just as they are ample to cover the case of the man who beats his horse or roasts a kitten to death. It is only occasionally that individual cruelty can be detected and punished and the principal deterrent action of any such legislation covering cases in which discovery is by the law of chance, lies in the adequacy of the punishment imposed in the individual case, and this in turn, lies largely with the individual court before which the case is tried.

Thus it should be plainly understood that any further legislation dealing with vivisection and allied

subjects, to have any value at all, must be directed at wholesale, public, discoverable institutions and industries.

YOUNG PHYSICIAN, GO TO COREA.

THERE is nowadays much complaint that the profession is overcrowded, especially in our large cities. We have always, for our part, believed that the trouble does not lie in our being too numerous, but that we are not well distributed. There are many regions, by no means unattractive, where good physicians are needed; and where young men in our profession would almost at once become well established in remunerative practices. And such being our belief, we read with especial interest the appeal of Dr. William C. Forsythe, who represents the foreign missionary board of the Southern Presbytery, and who is now canvassing our medical schools for enterprising graduates to begin their life work in Corea and to stay there for a few years at least. Dr. Forsythe states that the Coreans are beginning to appreciate the difference between "foreign doctors" and the native practitioners, and that all the medical missionaries are now swamped with work, some of their patients walking hundreds of miles for treatment. He could within twenty-three days take the young physician or surgeon to regions in Corea where he would have a quarter of a million of patients at once.

We hardly wonder after a consideration of some of Dr. Forsythe's descriptions of the "home medical talent," that the occidental practitioner is preferred. All that the latter would have to contend with would be the popular impression which has for many centuries and up to recently prevailed in Corea, that sickness is the work of demons. The Corean word for smallpox, for instance, means "honored guest"; this is to propitiate the particular demon who inflicts that disease. It would seem that a native of Corea can become a doctor by merely hanging out a shingle—there are no tiresome studies at medical schools, no wearisome apprenticeships served in riding on the tailboards of ambulances, no years of preliminary preparation. We see here that the young man need not fear he would be going into a benighted land; the Coreans are obviously just as advanced in civilization as we are. Have we not among us the prototypes of their native healers in our Christian Scientists, Osteopaths and the like? Sometimes the Corean practitioners are armed with a "good stout stick, with which to beat the demon persons." Here is even an advance on our civilization. For they have extended our use of the big stick, which with us has thus far been a weapon of a purely po-

litical sort. Some of these practitioners have additional equipments, as when a boy who was suffering from pneumonia had a fire built upon his chest. The prognosis in this case has not been divulged to a puzzled world. The Corean king, Dr. Forsythe assures us, is very strong for the doctors of the West, since one of his sons was badly injured. The native physicians were powerless to help the wounded man, and as a last resource Dr. Allen, the first of the medical missionaries, was sent for; who ligated an artery that was severed and thus saved the prince's life. There are, it would seem, no Corean surgeons. A few Japanese physicians have come to Corea, but not many; and "Japan is doing next to nothing toward extending her own splendid medical system to the Corean peninsula."

SOME GOOD POINTS ABOUT CHRISTIAN SCIENCE.

WE do not believe in Christian Science; indeed, we are more sceptic than most physicians as to the power of mental states to produce or avert purely physical conditions, as to the practical value to the patient of faith in his physician, as to the danger of informing patients as to their true condition when it is serious, etc. We believe that no such cult could flourish except in the medium afforded by a large, pampered, sheltered, leisure class of the community.

At the same time, there are certain lessons that we might do well to learn from this peculiar sect. In assailing the religious and (negative) therapeutic beliefs of this sect, we have overlooked the fact that every Christian Science society is, in theory and, largely in practice, a "Don't knock" organization.

It sometimes seems that it would be wise to make Christian Scientists of patients who have chronic, incurable diseases which require little treatment except moderate hygienic and dietetic care, such as certain forms of heart diseases, arterio-sclerosis, aneurysm, nephritis and hepatic sclerosis.

But the best effects of Christian Science is often manifested not by the patient but by his (or, rather, her) friends and family. For instance, we recall a responsible, busy, middle-aged merchant—whose name might be legion—who has usually worn a troubled look and, when his friends have asked what was wrong, has answered, not that his business was bad, not that his own health was poor, not that his sons were a source of worry, but that his wife was sick. More pointed inquiries have failed to elicit any definite statement as to her condition. Sometimes it would be a cold, sometimes a headache, sometimes an attack of indigestion, sometimes neuralgia, some-

times a vague condition of being tired and run down or the equally vague account of a "woman's disease." At any rate, without any serious impairment of strength, reduction of weight, organic lesion, or interference with pleasurable social duties, this woman has been a quasi invalid for years, with consequent disturbance of the home, various additional expenses and inconveniences for the husband and other members of the family. But one day we met the husband on the street and were impressed with his unusually cheerful condition. We very nearly asked him what was the matter but corrected the form of inquiry in time. Then came his pæon of joy. His wife was well, had had no headache, backache, nor other trouble for several months. "No more stomach-aching" was the way we translated it to ourselves. Then came the explanation; she had been cured by Christian Science; not that he was a convert himself, still one should speak well of the bridge that carries us over trouble. But, a year or two later, the gloom had returned to our friend's countenance. The Christian Science cure had not proved permanent and his wife had relapsed. "Sick of being well," was our hard-hearted mental comment.

After all, many a man of like circumstances, has a respite of a year or two, of similar nature and due to similar cause. Of course, the patient ought to be able to do the same thing for herself without any hocus-pocus, or the family doctor ought to be paid for telling her to go home and behave herself and she ought to do so without taking offense. But in the majority of such cases, neither of these simple, common sense methods is of avail and something mysterious and luxurious must develop as a curative factor.

It would be unfair to leave the impression that such cases always occur in women. They are essentially troubles of the leisure class and hence afflict women more than men. We recall a young business man who walked with a cane for months after a rather trivial injury and who blamed his surgeon for having discharged him before the cure was complete. We were tempted to tell him to throw away the stick but refrained on the general principle of minding one's own affairs. Later, we had the pleasure of hearing him relate at a hearing on legislation regarding control of medical practice, his marvelous cure by Christian Science.

In another case a clergyman who had also been a physician and a lawyer, had a hysteric aphonia. He was elaborately treated by medical colleagues by electricity and hypnotism. He recovered, not very rapidly, and gave the credit for his cure, from the pulpit, not to his physicians but to a special intervention of Providence.

CONGESTED POPULATIONS IN CITIES.

THERE are evils attendant upon population congestion which are coming to be recognized in a very general way. This is so in all large cities—in New York, in Boston, and in Chicago. In the metropolis a committee representing both the municipal departments which have to do directly or indirectly with the public health, and various non-governmental organizations which are interested in the communal welfare, has arranged for an exhibit at the American Museum of Natural History, to continue throughout the fortnight beginning with March 9th. This exhibit will be conducted upon the same plan as the Anti-tuberculosis exhibits which have been found so effective in educating the public concerning that disease.

In New York City the population is indeed increasing to an alarming extent—to an extent by no means generally realized, so vast is our territory, so varied our interests, so differing our modes of living and our customs. It is not that the half of us does not know how the other half lives; it is that one portion of us has no realization, even, of the existence of the many other portions. Such an exhibit then should be a revelation to many public-spirited citizens.

The congestion in certain sections is not merely a natural outgrowth of many years of pressure; it is due to industrial conditions and to enormous additions by immigration. Immigrants are naturally clannish; they seek at once the neighborhoods in which their own people have already found homes. And these neighborhoods are precisely those in which the congestion has already become very great. The consequence is that New York City is perhaps more than any other city in the world entitled to a cosmopolitan reputation. It is said that within its boundaries are represented some sixty-six languages and dialects. And it contains the most crowded sections in the whole world; there are in it fifty blocks which contain each the population of a good-sized town—from 3,000 to 6,000 inhabitants. Throughout our country a town that has from 3,000 to 5,000 inhabitants is considered a thriving and populous place and it spreads over several miles of territory. Yet in New York City such a population is many times contained in a block of two and one-half acres. Nearly half a million of our population of four and a half millions is crowded into the abnormally small area of 864 acres. If all the 209,218 acres of New York City were crowded in proportion to some of its dense blocks its population would reach the rather staggering figure of 115,000,000.

The committee to which we have referred believe that unless something is done and done within the next few years, this steadily increasing metropolitan

congestion will reach a point defying human efforts to remedy it, short of the most radical changes. Our population will, in all likelihood, have reached the seven million mark during the next decade. What is to be done it does not well know. The stupendous difficulties of the situation are recognized. That is why an agitation of the subject is now in preparation. A series of questions have been arranged which, it is hoped, will bring out a variety of views. Some of these questions are: Why do the people leave the country and small cities? Why do they move into New York? Why do they live in a block with 3,500 neighbors? Can people be induced to move into less congested districts? What are the economic factors involved in congestion of population? These and many other questions to the same purpose will soon very vitally interest the citizens not only of New York City, but of many other American cities as well. The matter is indeed becoming one of national import.

FRIENDLY BACTERIA.

WE physicians have been dwelling so incessantly upon bacteria as disease-breeding agencies, that the beneficent properties of many of these microscopic creatures have been rather lost sight of. As a matter of fact, however, most microbes are of the latter sort. Conn, in his fascinating little book, *The Story of Germ Life*,¹ demonstrates how large a part these microbes play in the orderly and salutary processes of nature. And that wisest of scientists, Metchinkoff, swallows every day many millions of the *Bacillus Bulgericus*, which are to be found in milk ferments, and which in his belief, kill off the putrefactive germs that bring on premature old age.

What, indeed, would the farmer do without the germ? How could the dairyman otherwise develop his cheeses and his best butters? We learn from Mr. K. H. Kellerman, physiologist in charge of soil bacteriology at Washington,² that it is a friendly microbe which has been to a very measurable degree, the cause of a trade excess in certain plant growths. Gigantic forage crops of alfalfa and clover, on which stock raisers largely depend, are greatly enhanced in value by bacterial inoculations, both natural and artificial; the germs attach themselves to the roots of these and other legumes (such as peas, beans and vetches), developing nodules, which have the power to render the free nitrogen of the air available for plant growth. We may judge how

much these crops are enriched by the computation that the nitrogen content of a soy bean crop was 113.55 pounds to the acre for inoculated plants, but only 75.98 pounds for those not inoculated; inoculated cow-peas had 139.21 pounds of nitrogen, an excess of 21 pounds over an uninoculated area; the dry weight of Canadian field peas, inoculated, was seven times that of a crop uninoculated with the nitrogen bacteria. Moreover, the nitrogen for the larger crops came mostly from the inexhaustible atmospheric supply, while the lesser crops impoverished the soil.

EPIDEMICS PAST AND PRESENT.

THE mediæval idea of epidemics was that they were due to some supernatural agency. A community utterly helpless in the presence of a deadly pestilence looked upon it as a divine chastisement. Hosts succumbed when the angel of death spread his wings on the blast. A cloud passed over a doomed city, and from it a death-dealing hand scattered the seeds of destruction. These ideas permeated literature and made it glorious; we may well regret that science, however much she has benefited mankind, has so curtailed the imagination that such visions as Byron and Coleridge saw cannot get themselves expressed in our day and generation. We are not likely soon again to enjoy such another story as *The Masque of the Red Death*, in which Poe so well represented the popular personification of disease, nor such another work as Sue's in which the Wandering Jew personified the cholera.

New ideas, however, never find instant acceptance. One might have thought the idea of the supernatural in disease propagation had been given up immediately Pasteur proved that germs are the specific causes of infection; to think thus would be to forget how hard and fast human nature clings to old forms. It was, for instance, comparatively very recently that a most unhappy mother bemoaned to Dr. Osler that "it had pleased Providence to take her baby from her." Providence, he told her, had had nothing at all to do with the matter; it was bad milk that had destroyed the baby's life. Providence was not to be thought so meanly of as all that. It is now several decades since Pasteur's pronouncement, based securely upon demonstration, that it is well within human power to banish from the face of the earth all parasitic diseases. Yet it is only recently that communities have begun to apply the wisdom derivable from the knowledge which he and his associates and successors have so freely set forth. There is indeed "a long interval between the purely intellectual acceptance of a truth and its practical application."

¹ Appleton, publisher.

² Bureau of Statistics Farmers' Bulletin 315; on "Progress in Legume Inoculation."

However, most noteworthy things are now being done throughout the world. There are many municipalities that are waging most effective warfare against the rat, that filthy creature upon whose mangy hide so many and various germs subsist. What is being done in regard to Bubonic Plague we have set forth in another column. We are now coming to drop the term "malaria" for "mosquito fever"; and almost everywhere, especially in the tropics, are both anopheles and stegomyia being exterminated. So that these regions are becoming as salubrious as those in the temperate zones, at least so far as infection is concerned. Throughout civilization a reasonable and scientific propaganda is being most successfully waged against the tubercle bacillus.

Flies are being understood to be germ carriers of a most dangerous sort; they have always been a nuisance and an indicator of uncleanly conditions; that they are likewise dangerous has determined civilized communities to eliminate them. We are coming to the time, it seems, when every person of sense and acumen must agree with Lecky: "The great work of sanitary reform has been, perhaps, the noblest legislative achievement of our age, and if measured by the sufferings it has diminished, has probably done more for the real happiness of mankind than all the many questions that make and unmake ministries."

BIBLIOGRAPHICAL

Surgery: Its Principles and Practice. In five volumes. By 66 eminent surgeons. Edited by W. W. Keen, M.D., LL.D., Hon. F.R.C.S., Eng. and Edin., Emeritus Professor of the Principles of Surgery, and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume III. Octavo of 1132 pages, with 562 text-illustrations and 10 colored plates. Philadelphia and London: W. B. Saunders Company, 1908. Per volume: Cloth, \$7.00 net; half Morocco, \$8.00 net.

The third volume of this masterly work is before us, and there will be two more to complete the set.

The present volume covers the surgery of the head, neck, thorax, breast, mouth, teeth, jaws, tongue, the technic of abdominal work, the surgery of the abdominal wall, the peritoneum and the retroperitoneal space, the esophagus, the stomach, the liver, the pancreas and the spleen, and will be looked upon as one of the most important.

The articles are written by fourteen of our foremost surgeons, the whole being edited by the renowned surgeon, Dr. W. W. Keen.

The text is fully and practically illustrated.

It has been the aim of the authors to record the very latest well established knowledge, so that the text should be thoroughly up to date, yet including few, if any, passing novelties.

This joint effort of the authors and the editor has contributed greatly to the increase and diffusion of

the knowledge of surgery, so that now the profession may be better equipped for the treatment of surgical affections than ever.

No surgical library can possibly be complete without this work.

The physical portion is perfect, the W. B. Saunders Company having done its part nobly.

Diseases of the Heart. By Prof. Th. von Jurgensen, of Tübingen; Prof. Dr. L. Krehl, of Greifswald; and Prof. Dr. L. von Schrotter, of Vienna. Edited, with additions, by George Dock, M.D., Professor of Medicine, University of Michigan, Ann Arbor. Octavo of 848 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, \$5.00 net; half Morocco, \$6.00 net.

We are glad to welcome this great work originally issued under the editorship of Professor Nothnagel to the English language. The translator has not attempted many or radical alterations or additions to the text, but has made it conform to the U. S. Pharmacopoeia.

The whole subject is most exhaustively portrayed in a single volume by authors whose eminence in the profession cannot be questioned.

The text shows evidence everywhere of sound learning, wide clinical experience and deep and broad training in anatomy, physiology and pathology.

The excellence of this whole series of monographs has been fully recognized in all countries, and it is gratifying that they have been translated into our own vernacular.

Our sincere thanks are due to the editors of each of the separate volumes, who have not only translated the original texts into our own tongue, but have brought it to date and adapted it to our use. Their names alone suffice to assure us as to the high standard of their work.

The text is illustrated by sphygmographic and other drawing, sufficient for its purpose.

Our warmest thanks are due Prof. Alfred Stengel for his able editorship of the wonderful series, and to the W. B. Saunders Company, for making the publication possible.

Proceedings of the Royal Society of Medicine. Edited by John Nachbar, M.A., M.D., under the direction of the Editorial Committee. Longmans, Green & Co., London and New York.

The "Proceedings" of this great society will be published monthly, from November to July, inclusive, and will contain the papers of, and the discussions read at each of the sections during the previous month, and will be so arranged that each section can, if desired, be detached and bound separately at the end of the year.

The price of each monthly number will be \$2 net, delivered. The first two numbers are before us, and bear out our expectations.

Fatal Hazing.—The New York daily *Times* relates that Wm. Keifer, a young man of twenty, was two years ago taken from his room in college, tied with his back to a tombstone and left all night in the chilly autumn air. A pneumonia set in after which he became a confirmed invalid, having to leave school. Some six months ago tuberculosis developed. His parents have all along observed his earnest request to make no trouble for the fellow-students who had hazed him.

CORRESPONDENCE

THE INITUS.

To the Editor of THE MEDICAL TIMES:

Hahnemann said: "Watch the beginnings of disease"; and this sentence might well be taken as the motto of the therapist. All disease has its beginning, and this beginning is invariably to be found as a disorder of the vital functions. There is a moment at which the patient is in a condition of health, followed by a moment in which something is wrong. Something in the complicated human machine has gotten out of order. Here disease begins.

From this point it makes its progress according to the nature of the malady. Disease does not stop at the point at which it commences, but progresses through certain stages, with certain effects upon the part of the body first diseased and upon other parts more or less remote.

The final ending of the malady tells the story depicted by the pathologist, from his examinations at the post-mortem table. It is evident, however, that he has only detected here the end-products of the malady; as we are so fond of saying, he is dealing with the ashes of a burnt-out fire.

To conclude from what he finds here, that the results of the disease being destructive and it being beyond our power to rebuild lost tissues, therefore therapeutics is unavailing, is simply preposterous. This view of pathology, and the unwarranted deductions made from it, have been a veritable "old-man-of-the-sea" upon the shoulders of the practitioner. It is time that this incubus was thrown off, and that common sense should again rule.

We have not to deal with the dead body on the autopsy table, but with the living body. We have not to deal with pathologic anatomy so much as with pathologic physiology. It is evident that the earlier the time when we seize an opportunity for intervention, the more effective it must be. If we wait until material harm has been done, it is questionable whether nature can restore the *status quo ante*, although the original cause of the disease has been removed and the pathologic process has ceased. It is much better to arrest the latter as early in the disease as possible.

To intervene effectively, however, two things are absolutely necessary: In the first place, a clear and distinct idea as to the nature of the disease, of the aberration from health with which we are dealing; second, we must have reliable and unvarying remedies, which we may apply with absolute certainty to the condition before us.

How surely the studies of the physician lead him back to physiology. This is particularly impressed upon us again by the report from the State Board of Pennsylvania Examiners, now being exploited in the dailies of Philadelphia. In this Dr. Beates shows that the greatest deficiency of candidates coming before him for license to practice medicine is in the department of physiology. The fundamental branch upon which all of our lifework must be done, is the most neglected study in the curriculum.

The illiterate student, thrown with insufficient preparation into the medical school, is carried away by the brilliancy of surgery. There is a fascination about the surgeon's work which affects all of us. The im-

portance placed upon surgery by the college misleads the student, for he naturally considers that as more than one-half of the four years' medical course is devoted to surgery, it must possess corresponding importance; and when he finds that the study of physiology is given to a comparatively unknown man, that is, unknown beyond the halls of the institution, a man of not very practical cast, and without that rude force which carries the surgeon, or the man who chooses to become a surgeon, to the front, and makes him dominate his fellows, it is but natural that the student should accept the college's low estimate of the importance of physiology. We are generally able to tell who is the surgeon of any given medical college. How many of the professors of physiology are known even to the medical editor, who is supposed to keep *au fait* with medical matters of every description?

Watch the beginnings of disease. Turn back to your physiologies. Get the newest editions of works in this department, and study them thoroughly. Surely, unless you comprehend the vital functions of the body in health, you cannot be prepared to recognize an aberration therefrom.

Hand in hand with this study should go that of the definite medicinal principles, that, recognizing the deviation from normal function, you shall be promptly ready to apply at once, vigorously and certainly, the exact remedy to restore the function to normal balance. There would be something machine-like in this application of remedies, were it not that it required a dominating consciousness on the part of the physician which is far from machine-like.

Were these two branches of medicine comprehended as they should be, it is safe to say that the domain of surgery would be reduced to comparatively small limits. When the physician is ready to promptly recognize and promptly apply the effective remedy for disorders of functions, he will not allow disease to go on until destruction of tissue has resulted, necessitating the removal of now useless and dangerous parts of our anatomy. The resort to surgery is always a confessed failure of physiologic therapeutics; and this failure is nearly always due not to the essential incurability of the affection, but to the neglect or inability of the physician to recognize the nature of the malady in time to institute curative action, and to his ignorance of such curative agents as would prove effective in the case.

It is ignorance, and always ignorance, that is our trouble. Sometimes the ignorance is excusable or unavoidable. More frequently it is neither. When the knowledge exists and is obtainable, it is our duty to attain it.

Watch the beginnings of disease. The better you do this, and the more thoroughly you comprehend the nature and application of your remedies, the more definitely you will rank yourself on the side of those who believe in the possibility of jugulating disease. It is for this reason, and this reason alone, that we so strenuously advocate the use of the active principles, and the custom on the part of the physician, of carrying with him a case of these definite, dependable remedies. We are not considering for a moment the interests of the physician or of the druggist; or the relations of these two professions to each other. We are not considering anything whatsoever but the pa-

tient, and the duty of the physician toward him; and this duty lies precisely in the line of the physician carrying with him to the patient's bedside a case of remedies, with whose uses he is as familiar as the carpenter is with his box of tools. Remedies that he knows through and through, whose applications are perfectly familiar to him; and which, having them with him, he is able to apply on the instant, before the malady in question has passed the dividing line which separates the functional derangement from the destructive malady which demands the removal of tissue or organ.

This is not popular, Doctor. The druggist does not like it. The surgeon does not like it. The general practitioner does not like it, very often, for it calls upon him for a concentration of his mind upon his cases, for a return to his text-books and an outlay for new ones, which are altogether more difficult than turning over a case to the "specialist." But, as we have said, we are looking upon the matter from the standpoint of duty, that duty which makes the physician what he is, which separates him from every other member of his kind, by placing upon him obligations which he, and he alone, has assumed and must meet.

So we say that the watching of disease is our duty, but not all of our duty; for the charge to watch means also to intervene, at the beginning of disease.

It is also for this reason that we have encouraged the idea that the physician should not base his charges upon the calls made after he has been summoned. He should assume rather the position of the hygienic protector of the health of his families.

We may be accused of favoring contract practice, for which we do not especially care; nevertheless, we do say that our ideal of the position which the physician should occupy, at the present time, is such that we have attempted to describe; that he should take upon himself the duty of preventing disease in the families intrusted to him; that the whole science of preventive medicine, which has been so greatly developed during the last quarter of a century, should be utilized by him, applied by him, in fact, monopolized by him; and that he should accept it as a part of his duty as family advisor. If by so doing he cuts himself off from the income which he would derive from visits made to patients while sick, he should make such financial arrangements as will enable him to do this, his bounden duty, to the families entrusted to him, without subjecting himself to such pecuniary loss as would render it impossible for him to exist under such conditions.

The idea that the physician while assuming such a rôle is cutting his own throat, by preventing disease for attendance upon which he would otherwise be paid, is too revolting to be considered. If we are to choose between accepting such an idea and being set down as an advocate of "contract practice," we will accept the latter without hesitation.

In this beginning of the century we are face to face with new conditions. The world never stands still, and conditions which may seem ideal to us are not yet good enough, or at least do not suit the coming generation. We must continually alter our ideals and our ways to meet with these new conditions, else we become hopeless back numbers. The more grievously competition presses upon us, from many unau-

thorized sources, the more it is incumbent upon us to make ourselves a necessity to our kind, by applying our superior knowledge of health and conditions, and the means of retaining them, for their benefit. The only difficulty as to the financial arrangement lies in our own minds. Surely, if we are wise enough to accept such a relation with the families under our guard, we should also be business men enough to frankly state the case to them, and see that on their part they meet it.

The trouble is not with them—it is with us. Instead of finding a difficulty in establishing such new arrangements, we are more likely to be met with the exclamation: "Doctor, why did you not do this long ago?" Like nearly all other difficulties this one quickly disappears before a plain statement of facts.

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Wanted, Some Words.—A bacteriologist, starting with, let us say, typhoid fever as a type of an infectious disease, and following all the lines of study suggested by analogy and association, soon becomes aware of the fact that a very large minority, possibly a majority of the various diseases that are commonly termed infections, are caused, not by bacteria but by other vegetable micro-organisms and by minute animal parasites. Malaria and variola-vaccinia are caused by micro-organisms fairly comparable in their size, methods of detection and growth in the body, to bacteria. Filariasis is a step removed. Trichinosis corresponds quite accurately to the definition and general conception of an infection but, knowing that the trichina is merely the larval stage of a small tape-worm, the bacteriologist, unless deliberately confining himself to a rut, must recognize the analogy between infections ordinarily so-called and infestation of the intestine with adult tape-worms of different species and genera. Other denizens of the alimentary canal attract his attention and some, as the trichomonas, he finds represented in the vagina and possibly other cavities.

Seeking broader knowledge of the living organisms that infest the body, he enters the territory of the dermatologist and finds that among the ectozoa are certain ones, as lice, which are not so much denizens of the body as of its natural hairy or even artificial clothing and others, classified as visitant ectozoa, such as flies and gnats, which are only more frequent and more minute enemies than serpents and vulnerating animals generally.

If he passes to a still more general study of the relation of parasites to other than human hosts, and applies the same general lines of thought to lower mammals, to other classes of vertebrates, to successively lower phyla of animals and then passes to the vegetable kingdom, he finds close associations of different organisms in which it is not easy to regard the parasite as lower than its host in biologic rank. For instance, there are three rather nearly related crabs, each of which is in turn, host, parasite and parasite upon parasite. And, as there are stellar systems in which the relation of large, central sun to smaller planets, gives place to the obviously mutual attraction of two or more approximately commensurate bodies revolving about a common center of gravity in a practical as well as a theoretic sense, so there are associations

of forms of life in which it is difficult or impossible to say that one is host and the other parasite. For example, the lichens, long classified as a distinct group and divided into genera, prove to be literal symbioses of two entirely distinct plants, one an alga, the other a fungus, yet presenting such regular and characteristic partnerships that it remains a practical necessity to classify them as if each lichen were an entity.

Even the bacteriologist who confines himself pretty closely to the human being as a host and to such parasites as produce what we call infections, must realize that, for his science and himself, more comprehensive terms are needed than bacteriology and bacteriologist.

Thus, it becomes necessary to employ the word parasite in a more general sense than as referring to an animal organism of macroscopic size. Still, with all allowance for the gradual transitions that are found in all natural science and which render it difficult to follow the scheme of an orderly assortment of successively larger groups, there remains the need of a technical word to indicate the rather large, locally injurious animal organism, such as a tape-worm or an itch-mite, that the word *parasite* suggests when not qualified.

So, too, in spite of the somewhat supercilious attitude which the trained bacteriologist assumes toward the clinician who speaks of *germs*, we must retain this word or substitute something better, to designate a microscopic, vegetable or animal organism, essentially parasitic and manifesting its presence by a general reaction and particular lesions and symptoms, on the part of the host. The word *micro-organism* is not applicable, since it applies equally well to myriads of animals and plants that are never truly parasitic, either to man or any other organism as a host. *Parasite* can scarcely be used since it applies, even more accurately with regard to etymology, to comparatively large and less harmful organisms such as tape worms and lice.

It is questionable whether any parasite of man fulfils strictly the etymologic suggestion of an individual who sponges upon another for his food but who does damage in no other way. Obviously, every animal with a large gullet, swallows many living organisms which are too small and too resistant to the digestive processes to be considered as food, which are not in the literal sense parasites, since they live merely upon other living and dead organisms with which they are swallowed and are not dependent for sustenance either upon what is often misnamed their host, nor do they depend except accidentally and in an inappreciable degree upon nourishment provided by the alimentary contents of the so-called host. Such organisms are also, for the most, entirely harmless to the animal which has swallowed them. Such pseudo parasites are often termed mess-mates or symbiotic parasites, but for man and the higher animals, there is never anything approaching the true symbiosis of the lichens nor the more or less mythic feudalism in which one organism depends upon a larger and stronger one to furnish nutriment and, in turn renders valuable services. It is true that various intestinal bacteria and fungi decompose cellulose and even produce from digestible carbohydrate, fat and proteid, substances analogous to or identical with those produced by intrinsic

digestive ferments; also that one bacterium may be turned against others which have assumed too great activity. But it is exceedingly doubtful whether such activities are necessary to the welfare of the host, since, under aseptic precautions, from birth or hatching, vertebrates may exist with germ-free alimentary canals and in as good a state of health as could be expected in the confining conditions of the experiment and since the alimentary canals of Arctic animals are practically sterile.

With regard to area of localization, some term is needed, in analogy with ectozoic and entozoic, to designate parasites (usually harmless) invading the mouth, nares, auditory meatus, vagina, sebaceous glands and other cavities opening externally and also, more important, the invasion of blood and lymph vessels, serous cavities and tissues normally closed against such invasion by animal membranes. For the latter group of invasions, the writer has already suggested the term *mesozoic* (and *mesozoa*) which is, however, used in a temporal sense in geology and which is not without objection from the standpoint of exact etymology.

While even entozoa may cause hæmolytic (probably never appreciable degrees of anæmia from sucking of blood or traumatism allowing minute hæmorrhages) and while there may be a general reaction even to the lesions of visitant ectozoa, such as fleas and mosquitoes, and while a true mesozoic infection (for instance röteln) may produce very mild symptoms and a localized entozoic or ectozoic invasion may be attended with rather severe general reactions, there remains the need of a very definite conception and exact terminology for what is ordinarily called an infectious disease on the one hand, and a localized paraciticism on the other.

Bacteriologists—or whatever extended name we may decide to apply to them in deference to their interest in other plants than bacteria and in disease producing animal organisms—are practically unanimous that the term infection should be limited to an invasion of the blood with or without extension to fixed tissues. But it is well known that a bacteriæmia does not necessarily constitute a disease any more than the presence of living animals and plants in the alimentary canal involves true parasiticism. For instance, it may be merely a terminal condition indicating lessened resistance or a conservative process of elimination. Moreover, it is not proved that certain of the most typical infections necessarily depend upon the presence of bacteria in the blood or even their distribution by that medium. Diphtheria is certainly essentially a local process and, on account of the aerobic nature of the bacilli, such bacilli as actually enter the blood or pass to deeper tissues or to the emunctories through the blood, seem to be almost entirely latent, so far as actual manifestations of disease are concerned. It is by no means established that tuberculosis or pneumonia must be distributed to sites of development by the blood. Indeed, the probability is that the older conception of a primary focus of disease, due to respiratory conveyance from without, is correct.

The present limited use of the term *infection*, whether permanent or not, calls attention to the need (1) for a very general verb and derivatives to signify the attachment of a parasite to a host; (2) for similar words referring to the establishment of what are commonly considered general infectious diseases; (3) for

special designations of infections involving an essential bacteraemia—corresponding to the present limited use of the term infection; (4) for special designations of germ processes which are essentially localized, as gonorrhoea, the first stage of sepsis, formerly designated sapraemia, colon bacillus intoxication, etc., but whose chemic processes cause systemic disturbance. It is scarcely necessary to state that the same germ may at different times, fall under either of the last two categories.

RETROSPECTIVE

Disease and Civilization.—In a most interesting little book entitled "Malaria," which was written in conjunction with Major Ronald Ross and G. S. Ellett, W. H. S. Jones, A.M., of Cambridge, considers this disease as a "Neglected Factor in the History of Greece and Rome"; and he believes that the conqueror of Greece was not so much the Macedonian or the Roman as that great tyrant which now holds half the world. Jones maintains his thesis extremely well. He shows first that malaria was not widely prevalent when Greece was in a flourishing condition. In Homer there is only one example of any term that might possibly designate it; after him such terms do not again occur before Aristophanes (toward the end of the fifth century, B.C.). During the following century, however, malaria was prevalent in many parts of the Hellenic peninsula, including Attica; though Greece was not "highly infected" in the technical meaning of Manson. The evidence of language, and the fact that the elderly people were frequently attacked, suggest that the disease had been but recently introduced by the armies returning from Asia. "The Greeks themselves noticed the effect of malaria upon character; the change which gradually came over the Greek character from 400 B.C. onward, was one which would certainly have been aided, and was, in all probability at least partially caused, by the same disease." Ross declares that to-day nearly one million out of the two and one-half millions of the Greek population are infected with malaria, or "mosquito-fever," as it should now more properly be called.

It is indeed an eerie, and certainly a fascinating reflection, that India and the East have fully avenged the conquests of Alexander and those world-compellers who followed him; for every life taken by the sword, malaria, it seems, has made manifold reparation. The theory of modern historical writing is, not so much the narration of political events, as the evolution of a philosophy of history, as the consideration of factors fundamental to the development of the race, and (with a view to their elimination in the future), of the factors which have brought about racial degeneration. Upon this theory, it is astonishing how much the historian has ignored the influence of disease upon the world's affairs. The populations of whole continents have in times past been well-nigh destroyed, both body and soul, by pestilences; yet we find little mention, and practically no consideration of them, in historic works of the first order. The bubonic plague, for instance, has been frightfully life-destroying throughout many centuries; yet in but one among several important works, that of Omen on the Dark Ages, is it mentioned; and even this author naively observes that it "merits a word of notice." The only

outbreak which he notices (one of many since the time of Sennacherib, at least), continued pandemic for fifty-two years; and it destroyed nearly one-third of the populations which were visited by it. Oman observes: "It was not the least of the causes of that general decay which characterized the later years of Justinian's reign"; surely it was one of the greatest, if not the chief cause.

The historian who describes for posterity the civilization of our day and generation should have no such distorted viewpoints. He will devote much space to and rate very highly as human benefactions, the labors of Ross, Manson and Haffkine in India, by which that peninsula has been made habitable by Western peoples, and by all those Orientals that are not irredeemably fatalistic; of the work of Koch and his co-laborers who are banishing the sleeping sickness from Africa and making vast regions in that continent fit for the enterprising white; of the achievements of Finlay and Reed, who have removed all occasion to fear microbic invasion from the tropics; of how Gorgas has made the Canal Zone as infection-free as any region in the United States, and more salubrious than a great many, and has made entirely practicable the construction of the Panama Canal, a work absolutely unprecedented in history as regards the benefits which mankind will in future centuries derive from it. A philosophy of history would be sadly incomplete which will not recognize that man's greatest enemies are things so infinitely little that his unaided senses cannot appreciate them; that the greatest blessings which human beings can confer upon their fellows lie in the domain of scientific sanitation.

The first medical library in this country is, states the *Philadelphia Ledger*, to be found in that city; it is the collection of the College of Physicians, which has for forty-four years past had its hall on the corner of Locust and Thirteenth streets, and for which a new and larger building is being erected at Twenty-second and Ludlow streets. The library in the office of the Surgeon-General at Washington contains more volumes, and ranks in this respect the first among the medical libraries in the world. The second in point of size is that of the Medical Faculty in Paris; and then comes the Philadelphia collection. The history of this library is almost coextensive with that of the College of Physicians, which is the first of American medical institutions, having been formed in 1787. Its first meetings were held in the rooms of the University of Pennsylvania, then on Fourth street, below Arch. At that time only one Fellow of the college lived west of Fifth street, so that the location was regarded as especially central by the fraternity in Philadelphia. In April 1788 steps were taken to form a library. Little was done, however, until July of the following year, when a committee prepared a list of books to be purchased at a cost of not more than £50. The first volumes, the nucleus of the present immense collection, were presented by Dr. John Morton; there were twenty-four books, principally in folio, consisting of the works of Hippocrates, Galen, Morgagni and Harvey. Morgan was one of the foremost medical men in this country at the time of his death. An Edinburgh graduate, he helped, upon returning to America, to establish the medical school of the University of Pennsylvania, the first institution of its kind in the Western world. Morgan was the first

man who ventured to carry a silk umbrella; and he introduced the practice of sending to an apothecary for all medicines needed by the sick. Before his innovation it was the rule for all physicians to carry with them the drugs and other things required by their patients. In January, 1792, the college removed to the hall of the American Philosophical Society, and there set up its bookcase, which was neither large nor especially crowded. No great encouragement was received in those days for the library, for between 1787 and 1794 the college had appropriated but £60 to it, and there had been few gifts. In 1836 the library contained only 291 bound volumes, with unbound pamphlets. The next removal was to the buildings of the Mercantile Library Company at Fifth and Liberty streets in 1845. There really began, through purchase and gift, the present famous collection. Nine years later the college leased the old Picture House of the Pennsylvania Hospital on Spruce street, where it remained until removed to its present building, where it received the important addition of Dr. Samul Lewis' gift of 4,000 volumes. Upon this came the collection made by George Ord which, while not composed exclusively of medical books, contained many valuable scientific and miscellaneous volumes—in all 2,000. Since then the institution has been the recipient of many important gifts, so that its books now number 32,000 volumes. It also keeps on file 728 current periodicals.

Internal Hydrocephalus.—Occlusion of the aqueduct of Sylvius is rarely referred to in actual cases, though text-books not infrequently mention it as a causative factor. Spiller and Allen (*J. A. M. A.*) take occasion to report a case of internal hydrocephalus induced by a probably congenital, almost total occlusion of the aqueduct. An elderly woman, supposed to have been born hydrocephalic, had lived, in spite of this and of an epilepsy that had lasted for years, to the advanced age of sixty-two, and had retained the faculties fairly developed. The almost entirely occluded aqueduct was well lined throughout by a layer of ependymal cells, which would not have been so had its occlusion been due to neuralgia proliferation. This and the continuation of the condition through the patient's whole life, indicates the congenital nature of the obstruction.

Indications for and Against Removing Adenoids. Thurber (*Arch. Pediat.*, January, '08) presumes the following questions to be asked by the parents, and he sets forth appropriate answers: Is the operation necessary? Consider the indications frankly and discuss them with the parents. Will not the growths disappear by themselves? There is the natural shrinkage at and after puberty, but the younger the child with indications, the more injury will there be done during the years before puberty. Operative results are best between the fourth and the eighth years. Is the operation a dangerous one? No; of course no operation is entirely free from dangers and sequelæ. Is an anæsthetic necessary? We can do better, and harm the child less with an anæsthetic; profound anæsthesia is not desired. Will the growth recur? It may; one can do an operation so severe that the pharynx will heal up as one big scar; but that is not the purpose nor the desirable result. Growths do recur; but a child had best have two operations

than one with a dry scar-tissue pharynx remaining for life. Will operation cure the child of all its troubles? It will be given a better chance to develop normally, will get better sleep, will be less liable to colds and various infections and its mental vigor and its hearing will be improved. "The child who has already got its second teeth, a crooked and narrow palate, compressed face, chronic catarrhal otitis media, and hypertrophic rhinitis will not show the improvement that it would have shown had the adenoids been removed months and years before."

Dentistry Among the Ancients.—The *British Medical Journal* recalls that Cicero, in his treatise "*De Natura Deorum*" ascribes the invention of tooth extraction to Aesculapius, third of the name. Hippocrates, it seems, first mentioned dentistry, and wrote much about toothache. Long before the dawn of Greek civilization, however, dentistry was a perfected art. The Phœnicians transmitted it to the Etruscans. It would seem that something very akin to modern bridge work was done in ancient Italy so efficiently that it has lasted thirty centuries; artificial crowns have also been found in Etruscan tombs; and artificial dentures go back to a remote antiquity. Prof. Guerin recently exhibited several specimens in proof of these statements before the International Congress, held in Rome, and Dr. Deneffe has found in the museum of the University of Ghent a set of artificial teeth found in a tomb at Orvieto, with jewels and Etruscan vases, which were probably made some five or six thousand years before the Christian era. In Dr. Lambra's collection of antique surgical instruments there is an artificial denture found in a tomb at Tanagra, near Thebes, which is believed to belong to the third or fourth century B.C. Teeth stopped with gold have been found in Greek tombs. In the laws of the twelve tables, made by the Roman Decemvirs in 450 B.C., it was expressly forbidden to bury or burn gold with dead bodies except when used for wiring the teeth. In constructing false teeth the ancients resorted to bone and horn; sometimes human teeth were employed. Benzoni found in some mummies artificial teeth made of sycamore. In the first century of our era false teeth were very common among the Romans. Martial ungallantly twits a lady with removing her teeth every night. Dentistry shared in the decay of the arts during the Middle Ages. St. Louis, who died in 1270, for instance, although he was only 55, had but one tooth in the upper jaw. French surgeons, notably Paré, took a leading part in the revival of dentistry. Louis XIV's dentist used only instruments of gold in operating on that august patient's teeth. After Paré the highest dentistry was in the hands of surgeons, extraction being left to barbers and quacks.

Acute Pancreatitis.—W. A. Jayne reports two cases (*Am. Surg.*, Dec., '07). Acute attacks are caused by bacterial invasion, almost always by way of the ducts. Animal experimentation (Flexner, Opie) has shown that bile, gastric juice and other substances act as irritants when thrown into the pancreatic ducts, and produce violent and fatal inflammation of the gland. One case was closely in accord clinically with the classic description—acute, agonizing epigastric pain, shock, nausea and vomiting, motor intestinal insufficiency, distension and tympany, threatening peritonitis, rapid

pulse and moderate temperature. After the subsidence of tympany and resistance, a circumscribed mass was outlined, which had previously been indistinct. Although pancreatic disease is without very distinct signs, the diagnosis can usually be established by a careful study of the history, mode of onset and the symptoms and physical signs. We suspect this affection in a previously healthy person, or a sufferer from occasional attacks of indigestion, who suddenly suffers violent epigastric pains with nausea and then collapse, with during the twenty-four hours a circumscribed gastric swelling, tympanitic or resistant, with slightly raised temperature. In such case exploratory incision, with drainage of the peri-pancreatic space is indicated, and possible punctures or incisions of the organ for the relief of the congestion in the early stages of an acute attack. If the symptoms increase and blood counts point certainly to suppuration, operation is imperative.

The noted osteologist, Jules Bailly, died recently in Montreal. His granduncle, Simon Bailly, was one of the committee who signed the order to behead Louis XVI. Jules began his career as apprentice to a pastry cook. He served during the Crimean war, after which he returned to Paris and became a messenger for a naturalist. Thus began his work in the field in which he became an authority of worldwide reputation. He held at various times appointments in Philadelphia, in the Paris Exhibition of 1878, and in Rochester. While passing through Montreal on his way to France he was induced to remain and to become osteologist of McGill University. He trained many pupils who have since become famous, among them Dr. Hornaday, the director of the New York Zoological Gardens in the Bronx. He was made an officer of the French Academy in 1897.

The diagnostic use of the ureteral catheter is described by J. A. Sampson (*Am. Surg.*, Dec., '07). One may thus detect valve-like obstruction or "ureteral kinks" from any source or in any location. If the end of the catheter is inserted beyond the kink, and sterile fluid is then injected through the catheter, distending the ureter and the pelvis of the kidney above, pain (artificial renal colic) will be complained of, and on removing the rubber bulb or syringe from the end of the catheter (which is, however, left in place) the injected fluid will escape and there will usually be relief from the pain or discomfort. On the other hand, if, after distending the kidney pelvis, the catheter is slowly withdrawn, the fluid will escape until the eye of the catheter has passed the kink; and then the flow will cease and the patient will not be relieved. If more fluid is then injected the symptoms are intensified; still the fluid will not return unless the catheter can be pushed farther up into the ureter, so that the eye is situated above the kink, when the distended renal pelvis (and perhaps ureter also) will be able to expel the fluid. A spindle or olive enlargement of wax may be made just above or below the eye of the catheter, and it may be felt to hitch over the kink and so aid in its diagnosis and localization. These bougies may also be used as dilators. Scratch marks on the wax-tip catheter may be a means of determining the presence of stone in the kidney and ureter.

Worry.—Pyle, in his excellent *Manual of Personal Hygiene*, declares that a striking example of the sac-

rifice of health from avoidable and preventable suffering is the great number of physical wrecks, the victims of worry. The relations of the mind and the body are very close; one of the most prolific sources of suffering is continuous worry; and one of the surest ways to restore health that is threatened is to keep the mind cheerful and hopeful. "Excessive ambition, misdirected energy, longing for the unattainable, regret for the unalterable, anticipation of future happenings, lack of a sense of prospective, fretting over non-essentials, indecision, reopening of troublesome questions already settled, avarice, selfishness, excessive emotions, uncontrolled passions, and the actual cultivation of the melancholic state," are important causes of mental anguish and subsequent physical suffering that are not commonly associated with the baneful breaches of hygienic laws demonstrable by teachers of practical physiology.

Unexpected Recoveries from Cancer.—The prognosis is nowadays in an unsettled state, some observations by Czerny (*Zeitschr. f. Krebsforschung*) are, therefore, *a propos*: In one of his cases a carcinoma of the breast did not recur after two operations; this result he believes was due to a mild infection of the wound with erysipelas. Another case of cancer of the cervix uteri was cured by curetting, cauterization and the application of chloride of zinc. A third case of non-recurrence was one of intestinal carcinoma for which an inadequate operation was done. Other cases were an osteo-sarcoma of the clavicle which had recurred several times, and was finally cured by curetting and the application of zinc chloride; a sarcoma of the upper maxilla which after several operations was finally cured by being curetted and treated by X-rays; a recurrent glandular involvement following carcinoma of the tongue disappeared spontaneously. Czerny finds that surgical intervention, when it does not completely destroy cancer tissue may lead to rapid involvement of neighboring tissues; sometimes, however, the human organism can destroy what is left.

Spina Befida.—Lovett of Boston (*Am. Jour. Orthop. Surg.*, Oct., '07) divides his operation into four stages: 1. A longitudinal incision as median as possible is made somewhat longer than the sac at its base, always avoiding if possible unhealthy skin tissue. The sac is freely opened; apparently no danger follows free or rapid escape or spinal fluid. A similar incision is then made on the other side of the tumor through skin and sac; and the sac is turned inside out for inspection. It is then cut away, leaving an elliptical hole at the bottom of which lies the neck of the sac. Resection of the cord and end to end suture has been done by Murphy in central dilatation of the cord. 2. The sac is closed and is reduced into the spinal column, its neck is dissected free, well down into the opening in the spinal canal. As much of the sac as is advisable is cut away, and the opening closed by an over-and-over, or a purse string suture of fine silk-threaded cambric needles. No leakage of spinal fluid should occur; efficient closure of the neck of the sac is most important. 3. We now furnish a firm layer to close the superficial opening, without which a bulging would very likely be followed by a partial relapse. A quadrilateral flap with the base toward the

middle line is then made through muscle and fascia, somewhat longer than the opening in the spinal canal and sufficiently wide to meet without great tension. These flaps are then inverted and sewed together by a close continuous suture of fine silk so tightly as to prevent any leakage from the spinal canal. We must fasten the top and bottom of the flaps to the underlying tissues, sealing the opening firmly against spinal pressure. In the sacral region there is no muscle, therefore a thin periosteal flap is made and treated as if it were muscle and fascia. 4. Finally we close up the skin incision by a continuous suture of chromicized catgut, reinforced by a few interrupted sutures of silkworm gut. In the case of very large tumors, where edges of skin incision will not meet, two long longitudinal incisions are made in the flank, and skin and subcutaneous tissue are dissected up as far toward the middle line as possible without opening into the sac; we then slide in the two flaps of skin, which will thus meet without tension. An elliptical raw surface is left to granulate in each flank. Antiseptic dressings are applied; over which we put other dressings, which latter can be changed when necessary without exposing the wound. We must operate rapidly, carefully dissecting the nerves from the sac, and closing tightly and efficiently the opening of the canal. In Lovett's series of operation cases nine (37½ per cent.) died within three weeks of operation. Many of these were hopeless anyway. Of eleven selected cases only two died. The statistics of 83 other operation cases showed 34 per cent. mortality. Morton, who injected a mixture of glycerine, iodine and potassium iodine (a method not much used to-day) reported 83 per cent. cured. If the immediate mortality is high we must take into account also a subsequent mortality in the years following operation from intercurrent affections; the percentage of ultimate success is probably not over 50 per cent. Cures occur occasionally without operation, but the mortality is here very great; the London Clinical Society reported 612 deaths in the first year out of 649 cases. We must not operate where there is hydrocephalus, existence of other deformities of severe grade, paralysis, or evidence of involvement of large nerves in the sac, and a very large tumor with large bony opening in the sac. The earliest case operated on was a child five hours old where the tumor had been ruptured at birth; this recovered. Another case of operation when the child was forty-eight hours old also resulted in recovery. We operate thus early when the sac has ruptured.

Mucous (nasal) polypi are differentiated from other intra-nasal swellings by E. S. Yonge (*Brit. Med. Jour.*, Oct. 12, '07). The former may be described as new formations commonly arising from some part of the ethmoidal mucous membrane; they are composed mainly (when fully developed) of a loose network of fibrous tissue; essentially, however, they consist of the normal tissue of the mucous membrane, the component parts of which are present in various proportions, more or less altered in character and associated with serous exudation and round cell infiltration. These structures are covered by the epithelium of the parts from which they spring. The typical mucous polypus is not a true tumor; and the theory of the older pathologists that a polypus is a myxoma has been disproved. The initial localized

edema which occurs in the nasal mucous membrane, and is the first stage in polypus formation, is a serous infiltration of the tissues, the result of obstruction of certain definite capillaries and veins—the edematous infiltration is, in fact, due to an obstacle in efferent circulation, which is in relation to the area in which the edema occurs. First, there is chronic inflammation of the mucous membrane; then there is dilatation of the glands, either through inflammatory obstruction of the excretory ducts (as associated with accessory sinus suppuration), or through excessive filling of the glands from hyper-stimulation such as occurs in chronic catarrhal rhinitis; then follows edematous infiltration of the surrounding tissues, resulting from the passing of serum through the capillary walls; then the formation of folds or projections of the infiltrated mucous membrane; upon this increase of edema in certain of the folds, combined later with a hyperplasia of the fibrous elements; resulting finally in the formation of flat edematous projections, the bases of which gradually become constricted or stretched until they constitute a pedunculated or gelatinous polyp. These glandular changes are secondary to the edema of the mucous membrane rather than causative of it, because of the very varied circumstances in which they appear; on the other hand bi-lateral polypi, occurring without any manifest local cause, must be due either to a particular irritant (septic discharges from the accessory sinuses) or inflammatory occlusion of the gland ducts, or to a common irritant. The latter Yonge ascribes to a constitutional peculiarity in many cases and to an irritability of the nasal vaso-secretory mechanism, which leads (among other effects) to periodic hypersecretion and overloading of the gland, and which frequently manifests itself as a reflex nasal neurosis. Nasal polypi have often been found post-mortem; oftentimes, therefore, they are not detected on clinical examination and are then perhaps mistaken for chronic nasal catarrh.

Gastric Ulcer.—Musser discusses (*Am. Jour. Med. Sc.*, Dec., '07) whether we should consider this a medical or a surgical disease. He concludes that when it is uncomplicated—when it is productive of perversion of secretory function alone—it is a medical disease. Hyperchlorhydria is in part a neurosis; and the secretory function can be balanced chiefly by medical, dietetic and hygienic measures, even if pyloric spasm attends the hypersecretion and hyperacidity. There should be no operation unless motor disturbances become prominent. Of 409 cases of simple uncomplicated gastric ulcer, death was the ultimate result in 17.3 per cent. The immediate result in the cases treated medically was a mortality of 12.4 per cent. In the cases of this group treated surgically the mortality was 20 per cent. These figures would indicate that simple uncomplicated ulcer is a medical disease. On the other hand gastric ulcer with complications and sequelæ is a surgical disease. Operation is indicated at once if perforation has taken place. Acute hemorrhage rarely requires surgical interference; but we must operate when hemorrhage is repeated and chronic, as also if there are symptoms of persistent retention from obstruction, dilatation, hourglass contraction or adhesions. If the symptoms become continuous despite medical treatment and incapacitate or threaten life, and if hemorrhage recurs and secondary anemia arises, we have to deal with a surgical

disease. The great frequency of chronic gastric ulcer with sequels requiring operation is due to the neglect of the treatment of ulcer in its incipency. Most patients are operated on between the thirtieth and fortieth year, and have an ulcer history of five or ten years' duration. In uncomplicated ulcer we should employ rest, at first absolute and later modified, suitable diet and drugs for at least four months; hygienic and dietetic treatment must be continued over a period of years. If there be organic complication, such as pyloric obstruction from thickening or adhesions, or extreme dilatation or hour-glass contraction, operation is in order. Perforation admits of no delay (the statistics show a marked increase of mortality with each hour that operation is put off). Operation is rarely necessary for hemorrhage; if it be acute we do not operate unless the peril of hemorrhage outweighs that of operation (a nice and rather a difficult distinction). Persistent hemorrhage giving rise to anemia requires operation. Gastro-enterostomy is not a trivial procedure; only a man of good technical ability and experience should undertake it. A patient who has had ulcer should ever after keep his digestion and his nervous system normal.

Infectious Pyelonephritis, declares Juy (*Am. Jour. Urology*, July, '07), can usually be cured by sufficiently prolonged medical treatment. We should make the diagnosis as early as possible. We may detect pyelorenal infections by a systematic examination of the ureter in its abdominal course. The painful points are subcostal and paraumbilical; the sensation of a large and painful ureter is ascertained by vaginal examination; we get painful spots on the prostatic horns, ureterovesical and pyelovesical reflexes, associated with pyuria and nocturnal pollakiuria. This symptom complex of Bazy will make us tolerably sure of pyelonephritis. Hygiene and diet are regulated. While pus cells are present in the urine we keep the patient in bed on an absolute milk diet. Balsams may be useful; but such internal antiseptics as salol, urotropin, and helmithol have given remarkable results. Hydrologic medication may be resorted to. We may consider we have cured simple pyelonephritis when the painful points along the ureter disappear and there is cessation of the nocturnal pollakiuria. When there is distension of the pelvis there will be changes in the general health, persistent pyuria, and increase in the size of the kidney. Before surgical interference in cases of septic retention we should examine as to the functional value of both kidneys. We should study the total urinary depuration by the usual examinations, cystoscopy, etc. These procedures are afterward applied to the study of urine coming from each kidney, collected either by ureteral catheterization or segregation. Nephrostomy is the operation of choice in septic pyelorenal retentions. Lumbar fistulae, which persist, being kept up by an incomplete retention, should be treated by secondary interference, lateral anastomosis of the ureter to the renal pelvis, resection and transplantation of the ureter, or orthopedic resection of the kidney, will result in a cure. Secondary nephrectomy presents very limited indications. The pyelonephritis of pregnancy should be treated medically; and surgical interference with the kidneys is indicated only after labor, which should rarely be induced.

Adrenalin chloride with cocaine in eye diseases has been found effective by Theobald (*J. A. M. A.*, July 27, '07), who first used this means to check hemorrhage, and who has latterly found that in this combination the anæsthetic effect of cocaine was definitely increased. During operations on the cornea and conjunctiva cocaine alone has sufficed. But Theobald did not find such to be the case when operating on the ocular muscles, the lachrymal apparatus, chalazion and other tarsal cysts; here the combination with adrenalin has proved of undoubted value. The purely mechanical passage of probes through the occluded lachrymal duct and the slitting of the canaliculus is thus certainly less painful. In tenotomies the hemostatic action of adrenalin is most desirable, though it does not as effectively control hemorrhage from the divided tendon as it does from the conjunctival incision. One should be careful in the use of adrenalin in doing a corneal section for cataract extractions and iridectomies except during inflammatory glaucoma, where the anæsthesia from cocaine alone is often far from satisfactory. Adrenalin should not be used in operating for pterygium, because its blanching effect renders the outlines of the growth difficult of recognition. In ocular traumatism the installation of adrenalin by checking hemorrhage greatly helps the detection and removal of foreign bodies imbedded in the superficial structures. The 1-1,000 solution has been used in full strength repeatedly and freely, without any untoward circumstances except as referred to in this paper. Its sterilization by brief boiling in a Florentine flask does not impair its efficiency. The toxicity of cocaine is markedly lessened through the action of cocaine.

The Hypodermatic Use of Quinine.—Symons (*Indian Med. Gaz.*, May, '07) has used quinine in this way during four years in Madras, and he has had but one superficial abscess. The hyperchloride, which he uses will dissolve in equal parts of distilled water. The needle is sterilized by boiling two or three minutes in a test tube. The syringe is washed out with a 1-20 solution of carbolic acid, the piston being drawn up several times. A small spoon is also placed in the carbolic lotion and is used to receive the quinine solution when it is poured out from the bottle before being drawn into the syringe. The glass stopper and the neck of the bottle are thoroughly cleansed with a sponge dipped in the carbolic solution, and the parts are prepared in the usual way. Ten minims (equal to ten grains of the salt) are injected into the deltoid muscle. Even tetanus is no contraindication to intramuscular injection. Symons has been thus injected at 10 a.m., and has played polo the same evening. Sometimes there is a slight aching during injection, but this immediately passes off. This method Symons believes much preferable to administration by mouth. The digestive organs are thus not deranged and the drug acts quickly—a great desideratum in "malignant" cases. The temperature comes to normal in from 24 to 30 hours and stays so. Injections are practised on three successive days; and then on alternate days until it is certain that the patient is quininized. Cinchonism has never been observed by Symons, and in all his cases the plasmodium has been demonstrated before injection.

MISCELLANY

The milk supply of New York City comes from six States; there are 1,750,000 quarts of it daily, and this is gathered from over 35,000 farms and shipped from about 700 creameries.

Babies Severely Handled.—The advertisement of a patent infant's feeding bottle directs: "When the baby is done drinking, it must be unscrewed and put in a cold place under a tap. If the baby does not thrive on fresh milk it must be boiled."

Acquired Syphilis in an Infant.—J. C. Nixon reports a case (*Brit. Med. Jour.*) in which the mother had acquired syphilis, the chancre having been on her breast and having evidently been derived from a similar and earlier lesion on the child's lip. How this first lesion came about is not explained.

Germs Found in Gall Stones.—Gilbert and Lippman (*Société de biologie*, Nov. 2, '07) have found pathogenic germs present in 82 per cent. of gallstones. Most are anaerobic. Frequently one stone would contain two or three varieties, especially the enterococcus and the *Bacillus funduliformis*.

Tuberculosis and Weather.—*The Therapeutic Record* states that twenty years' observation over a district in Dartmoor and North Devon has shown markedly that populations exposed to strong prevalent rainy winds have a higher consumption death-rate than those which are sheltered from the elements.

The Mikado's Heir is Consumptive.—Prof. Van Baez, of Berlin, has been summoned to Tokio to consult with other physicians concerning the health of the Japanese Crown Prince, whose lungs have become affected. His condition must give concern to the Japanese nation, inasmuch as he has four sisters and no brother.

Music for the Insane.—Four hundred patients in the Dunning, Ill., Asylum, recently listened quietly throughout a concert given them. Those who in the wards are continually restless, sat quiet and subdued, states the *Medical Record*. This music proved "better than barrels of medicine and much more effective than straps or straight-jackets."

The Rectoscope in Diagnosis.—Chaput urges the more frequent use of this instrument in rectal cases. One may thus find ulcers in the sigmoid which could not otherwise be undiagnosed. One may also cauterize ulcers and make other healing applications through the tube of the rectoscope. The technique is not difficult; the knee chest position will facilitate the examination.

Florence Nightingale is now in her eighty-eighth year. The King has recently decorated her with the Order of Merit, which was thus bestowed for the first time upon a woman. This Order was established in 1902 for the recognition of especially distinguished services in all walks of life. The English people regard it as one of the highest possible honors within their sovereign's gift.

Toothache is oftentimes due to acid substances or acid secretions in the mouth. A general aching of all the teeth may be caused by an acid saliva acting upon the teeth just where they emerge from the gums. Lander Brunton counsels frequent washing out of the mouth with a solution of soda bicarbonate or the sucking of tablets of this alkali; by this neu-

tralization of the acid the pain ceases in a marvelous manner.

Bull fights, it seems, have lost popularity in Lima, if we are to judge from the conclusions of Dr. David Todd, professor of astronomy at Amherst, who, returning from the lofty plateau of the Andes, where he had been studying the heavens, paused for relaxation in the Capuan gardens of Lima. One Sunday he visited the great bull ring and observed: "It may be interesting to Americans that as soon as football was introduced at Lima according to the rules in force at our college, the receipt of the bull ring fell off at once."

Infectious corneal ulcers are treated by Jacqueau (*Lyon Med. No. 6, 1907*) with weak solutions of hydrogen peroxide; a few drops of one part to six of water are instilled daily (a stronger solution would create a sensation of burning). After the instillation minute bubbles are seen on the surface of the cornea. The lids are gently wiped and the pus is removed until the bubbles are no longer formed. This treatment is repeated daily, until no more pus is found. After the treatment a little yellow oxide of mercury—Pagenstecker's—ointment is placed between the lids.

The shrine of Christian Science has recently been transferred from Concord in New Hampshire to Brookline, near Boston. It seems a special train was engaged, protected by a pilot engine ahead and a trailer behind. Even if a rear-end or a head-on collision, with a side-swipe thrown in, had been possible such "errors of mortal mind" could surely not have affected the hearers and the devotees who accompanied her. And why did that practising physician, with "credentials," ride all the way in Mrs. Eddy's suite, since that lady has through many years been condemning the practice of medicine? Such things as these certainly do puzzle the ordinary citizen.

The Typhoid Bacillus in Lice.—Nakao-Abe makes a most important report (*Munich Med. Wochenschr.*, Sept. 24, '07) concerning the question whether the bacillus could be demonstrated in the bodies of lice and flies that had bitten typhoid cases, or those who had attended such patients. He washed the insects, immersed them for some minutes in a 1 to 1,000 solution of mercuric chloride, washed them again in sterilized water and finally ground them in an aseptic mortar. The material thus triturated was inoculated into animals and upon culture media. In the lice of three out of four typhoid cases he found the bacillus. No doubt flies and other insects would be found to harbor this and other bacteria.

Sudden death, declares W. N. Belcher (*Long Id. Med. Jour.*, Jan., '08), occurs too frequently. Changes and conditions in the vascular system are responsible for nearly 90 per cent. of all sudden deaths from natural causes. Sudden deaths can be explained in many cases; in others the cause can only be conjectured; in none can it ever be satisfactorily explained without autopsy. Many, although absolutely unavoidable, are apt to be thought by the layman to be preventable. It is the duty of the physician to safeguard his patient, so far as may be possible, against sudden death by careful examination. Sentiment should never interfere with post mortem examination of all cases of sudden and unexpected death.

HEREDITY AND DISEASE.

BY JOHN B. HUBER, A.M., M.D.,

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HEREDITY is defined as "the biological law according to which living beings tend to repeat themselves in their offspring, and to transmit to them their properties." This is an excellent definition if we substitute "the summation of processes" for "law." A law connotes something well established and fairly well ascertained, and our present day knowledge of heredity does not justify any such assumption. The fact is that the mysteries of heredity have been investigated by very great minds from the dawn of history up to our time and (except by Mendel, as we shall see) with almost no definite and sure conclusions. This is in a way a comfortable state of things; for one may assume almost any position as regards heredity, and will find many scientific facts to support him. For instance, it is quite certain that tuberculous parents are likely to have consumptive children. Yet it seems, on the other hand, very well established indeed, that in some cases tuberculosis in the parents actually renders the children immune to that disease. There have been a number of theories concerning heredity, especially those advanced by the evolutionists, no one of which will explain all the phenomena observed. It is not within the scope of this article to examine into these. It will suffice to set down statements, some absolute facts, others as nearly incontrovertible as may be, from which practical deductions can be made.

It is a fact of anatomy that the generative organs, both male and female, are nourished by the blood of the general circulation. That the nutrition of these organs must vary with alterations in the general nutrition of the body is obvious; that the cells of these organs, and consequently their texture and function, can escape the ill effects resulting from impure blood would seem impossible. So that if the bodies of the parents are not healthy their progeny must surely suffer a great handicap in the struggle for existence.

A position pretty well established is that in heredity functional but not anatomical modifications are transmitted. The development of an organ is regulated by exercise of that organ; it would seem then that transmitted functional modifications may be accompanied by anatomical alterations as a consequence. For instance, it is not because the brain is highly developed that the intelligence of the individual may be remarkable; but the anatomical centres which serve as the machinery of the function have attained an unusual development because a superior cerebral power has been inherited. That is, the function precedes the organ, and explains, directs and regulates its development. The practical point here is that many abnormalities may be overcome through training and the establishment of good habits, for posterity at any rate, if not for the individual taken in hand.

Marriages between relatives give bad results. Such unions are sterile, or the children suffer from malformations, albinism, eye-affections, polydactylism, and especially deaf-mutism. These abnormalities do not always follow; oftentimes the progeny are quite normal. The fact seems to be that the effects of consanguineous marriages are to be explained simply as the

summation of common characters. The chances are that the parents, belonging to the same families, possess the same characteristics and the same physical or moral defects. These add themselves and increase in the descendants, as they are not corrected by different defects or qualities. Consanguinity must be looked upon as "cumulative converging heredity." Social consanguinity, or marriages between individuals of the same social class, has results analogous to those of family consanguinity, and for much the same reason.

The curious condition which we term hemophilia exists in families; and there are recorded complete genealogical trees which prove that "bleeders" may transmit their peculiarity through many generations. In these cases the blood has not the property of coagulation; so that, after a slight wound, such as the extraction of a tooth, death may result from a loss of blood which cannot be staunched. Males are much more frequently affected than females; but females who are not bleeders, but who have had bleeding ancestors, may transmit the disease to their male offspring.

Yet some men question that there is really such a morbid condition as hemophilia. Bodine, for instance, invites us to observe how very frequently (almost always, it seems) the bleeding in such cases comes from the upper air passages. And he relates how, having been called to a supposed hemophiliac in his hospital service he found him bleeding profusely from an operation wound in the throat. A bed sheet which had been put about the patient's neck was all but saturated; the nurses were white with terror, the internes fearful and nervous. Bodine had a cork put at once between the teeth, the sheet and the other terrifying accompaniments of the case were removed, the patient was reassured—whereupon the hemophilia ceased. Naturally, thought Bodine, the blood would flow so long as the patient prevented its clotting by continually sucking it up; and the means he employed were logical, effective and most gratifying in the circumstances.

Cancer is classed among hereditary diseases. Heredity plays a large part in nutritional disorders, such as gout, eczema, neuralgias, diabetes, gravel, asthma and the like. The same affection is not always transmitted: a gouty father may have an asthmatic child; the son of a gouty father may have neuralgia in childhood, asthma in youth, gout at forty, and may die from the results of hardened arteries.

Disorders of nutrition determined by chronic intoxications frequently, though not invariably, manifest themselves in the offspring. Children of dipsomaniacs are badly developed and present numerous stigmata. The alcoholic taint is manifested by size below the average, a sad, morose and acutely sensitive disposition, often precocious intelligence, sleep disturbed by nightmares, terrors and the like, a lack of equilibrium, weakness of attention and of will, the exhibition of oddities of ideas and behavior. There is an asthenia of the nervous system which expresses itself in a deficient moral sense and in bad and irresistible impulses. In eighty out of one hundred cases epileptics are born of parents tainted with alcohol.

Lead poisoning, in the father, has had the following results: of a total of 141 cases, there were 82 abortions, 4 premature births, and 5 still born children. Of the

50 children born alive, 20 died in the course of a year, and 15 between the first and third year. The survivors generally suffered from frequent convulsions, epilepsy, imbecility, idiocy and the like. The same may be said of other poisons, such as carbonic oxide, mercury, morphine and the like. Fortunately, in most such cases, when degeneration reaches a certain degree, sterility intervenes. "Thus inferior and defective races disappear."

We come now to specific infections. Of these the most important are syphilis and tuberculosis.

Syphilis, fortunately, I think, produces a tendency to abortion. The child, if it is born, is a weakling. It has a bad constitution, it develops slowly, teething is retarded and very defective. Three things are likely to manifest themselves: a notched depression in the cutting margin of the teeth, inflammation of the iris and deafness. The bones are poor in lime salts, so that deformities present themselves. The intellectual development is slow, as is also that of the body. Stigmata appear. It is chiefly maternal syphilis which engenders these baneful disturbances. Paternal syphilis results generally in abortion.

Tubercular children have breathing capacity below the average, they often have emphysema; their chests are narrow, lacking in depth, the shoulder blades project and the muscles of respiration are small. There is also slow teething, poor bone formation, stunted growth, defective development of the generative organs and of the heart and blood vessels. Besides these infections there are a large number, such as diphtheria, pneumonia, typhoid fever and erysipelas, which are remarkably frequent in certain families.

With regard to infective processes Roger in his admirable *Introduction to the Study of Medicine* summarizes six possible eventualities: 1. The germ, coming from the mother, traverses the placenta and causes in the fetus a disease sometimes more serious than in the mother (pneumonia, typhoid, sometimes syphilis); at times similar (smallpox), but in some cases presenting special localizations (syphilis); at times different (typhoid, anthrax). The manifestations are generally immediate, but they may be tardy (syphilis and perhaps tuberculosis). 2. The germ comes from the father and invades the organism of the fetus, the mother remains intact; but she may acquire immunity against the infection afflicting the offspring (syphilis). 3. The germ does not reach the fetus; but the child suffers from dystrophic disorders manifesting themselves in malformations, stigmata, degenerations and infantilism. 4. The child seems normal, but it has received from its mother (or from its father?) an immunity generally not well marked and of short duration. 5. The child receives from its father, or from its mother, a particular nutrition, which predisposes it to certain infections. 6. The child is in no wise influenced by the infection of its parents. Thus "every contingency may become a reality, from an infection leading to speedy death to the total absence of impregnation"; Roger being, then, in accord with the observation with which this paper was begun.

I may not linger over the fascinating study of nervous heredity—of the development of hysteria, epilepsy insanity and the like. It must suffice to set down a few of the many stigmata of degeneracy, such as manifest themselves for the most part in inherited ner-

vous disorders. There are: deformation of the cranium and of the face; asymmetry; existence of abnormal sutures; protrusion of the upper or of the lower jaw, deepening of the palate, irregularities in the development of the teeth and their speedy decay, harelip, hollow thorax, absence of one or of two pectoral muscles, short fingers, exaggerated development of the hairy system in women and the reverse in man, imperfect or irregular development of the organs of generation; squint, deformities of the iris, and other affections of the eye; color-blindness; deaf-mutism, anomalous development of the external ear; stammering, tics, lispings; besides these are intellectual stigmata, the most marked of which is a tendency to suicide. It must be observed that the appearance of a slight stigma in an individual is apt to be meaningless; few among us have not some such stigma. The appearance of a very obvious stigma, such as harelip, or of a number of stigmata in one individual is conclusive.

Now regarding Mendel's law. It is now generally agreed that this law is up to the present time the most correct exposition of the phenomena of heredity that we have, which cannot be said of the theories which such great men as Darwin, Weisman and Lamarck have propounded on the subject. Ten years hence we will all no doubt be as familiar with it as we are now with the most obvious of nature's laws; so that we had best, as physicians, grasp it as soon as we can, for the reason that it will enable us to understand the better many puzzling cases in our practice. But it is a very difficult matter to comprehend. I have for my part been pegging away at it for some time; and am just coming to see daylight regarding it. I have read the expositions of several writers; one of these, after a number of laborious pages, concludes, rather hopelessly: "If this is incomprehensible, I can only express my regret." Another writer formulates the law this way: "The gametes [germ cells] of a heterozygote [hybrid] bear the pure parental allelomorphs [members of pairs of differentiating characters, such as black and white, smooth and wrinkled, etc.] completely separated from one another and the numerical distribution of the separate allelomorphs in the gametes is such that all possible combinations of them are present in approximately equal numbers. Note that it is impossible for both members of the same pair of allelomorphs [differentiating characters] to occur together in the same gamete." Or, more simply (!) "that the male and female germ cells of hybrid plants contain each of them one or the other member only of any pair of differentiating characters exhibited by the parents, and that each member of such a pair is represented in an equal number of germ cells of both sexes." Here is the present day analogue of the famous fifteen puzzle which Robert H. Lock submits in his admirable book on *Variation, Heredity and Evolution*;^{*} and I invite my colleagues to work it out for themselves.

The simplest presentation of Mendel's law which I have come upon is set forth in *American Medicine* (March, '07); and this presentation is the basis of the following paragraphs:

In every species in which this law has been tested, either plants or animals, it has been found to operate, in some characters; yet because of the persistence of

^{*} E. P. Dutton & Co., Publ.

the false and foolish idea that man is an exception to natural law, some have denied that it applies to him. "The evidence that it does is in the possession of every family doctor in the land. Mendel was a priest and an amateur botanist. He was much in the same class with Pastor Spellanzoni, who did so much to advance our present day knowledge of gastric diseases. Yet because Mendel was not an orthodox professional his wonderful discovery was treated with supercilious contempt until the orthodox ones discovered it for themselves. Thus was the progress of biology delayed for thirty-five years. Mendel had a huge brain and wonderful powers of observation, whereby he detected the fact that when certain varieties of plants were crossed to form hybrids and these were interbred, the individuals of the third generation seemed to differ from each other according to some rule. He at once sought for that rule; and found it. He modestly published the facts—and they were forgotten. This was in 1865. "But the stone which was then neglected has become the head of the corner." Our theories of heredity have been revolutionized by means of it.

When we cross two varieties of a plant which differ from each other in only one character (say length of stem of peas), the resulting "hybrids," as a rule, are not intermediate between the parents. One of the types is so preponderant in the hybrid that the other can be detected with difficulty, if at all. In the illustration here given the hybrids have long stems. The evident character, length of stem, is called "dominate"—and the latent or disappearing one is called "recessive." When hybrids were interbred or self-fertilized Mendel found that the latent or recessive character (short stem) reappeared in one-fourth of the grandchildren, and these (one-fourth) subsequently bred true to this type. In the other three-fourths of the grandchildren the dominant character (long stem) appeared, and they all resembled their hybrid parent; yet when interbred, one third of the offspring—the great-grandchildren—were of the long stem or dominant type, and remained so in subsequent generations, while two-thirds were real hybrids like the second generation. That is, hybrids produce seeds, one-half of which develop hybrids, one-fourth are true to one type and one-fourth to the other. There are exceptions; but the rule is as here set forth.

The explanation of Mendel's law is simple enough if we accept the theory that each character is independently present in the hybrid, and does not always blend with the other. It is also assumed that both the opposite characters (longness and shortness of stem, for instance) could not exist in the same germ cells of the hybrid. Consequently there are two kinds of germ cells in each male hybrid and each female. The conjugations occur by the ordinary mathematical "laws of chance of probability," which explain the relative numbers of the resulting forms. The revolution in our views of heredity is in this evidence that opposite characters in children are not, as we were wont to believe, necessarily blended in the children, but may exist independently in them, either evident or latent. Consequently, grandchildren may, in one or more respects, resemble a grandparent and not the parents. Thus is altruism explained; as also that evolution of the new species is not generally due to crossing, for Mendelian hybrids disappear by breaking up into the parent types in subsequent generations.

When the parents differ by many characters the combinations in the germ cells of the hybrids by the "laws of chance" are very complicated; and the formulas explaining the results are so complex that only a trained mathematician can undertake to elucidate them. For such reasons as these we have failed to note the Mendelian process in man, when the differences between the parents are so numerous. Nevertheless, study of individual differences of parents will no doubt bring out many facts according with the law, which applies to functional and mental characters as well as physical.*

There has in recent years developed the science of "Eugenics" of being well-borne; this science Professor Karl Pearson has defined as "the study of agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally. Obviously the range of investigation is here a very wide one, including as it does problems of inheritance, of environment, of nurture, of disease and health, vigor and impotence, intelligence and stupidity, sanity and madness, conscience and irresponsibility, clean living and depravity, housing, schooling—in short, the thoroughgoing engenist would have to take not only all knowledge but also all aspects of existence for his province. Briefly, the science of eugenics should be a combination of sociology and medicine. Professor Pearson, in his Boyle lecture on the Scope and Importance to the State of the Science of National Eugenics,* tells us that it has already gone through two stages of development and reached a third. The first is the idealogical in which men have formed idea about phenomena on the basis of very limited experience, and spend their time in discussing these ideas, without much reference to the phenomena themselves. The second stage is the observational, when phenomena are critically observed and their sequences recorded and described. The third stage is the metrical, when we proceed from observation to measurement, to accurate numerical expression of the sequences involved. The last stage, declares Pearson, is the one which the science of eugenics has thus far reached. For instance, in the Francis Galton Laboratory in the University of London, Pearson and his colleagues have already collected between three and four hundred pedigrees of tuberculous stock; four hundred family histories of insanity; four hundred descriptions of parentage and home environment of mentally defective children, with as many more of normal children, the records of nearly four hundred noteworthy families and three hundred normal families, with psychical and physical descriptions and entries as to ailments and causes of death. And these, we are told, are but the beginnings of collections that "will one day represent large samples of the physique, the mentality, the fertility and the disease of wide classes of the nation." These data are being formulated in such manner that we are by them likely to get exact knowledge as to points regarding which medicine or economics or sociology has thus far furnished only broad and often loose generalization. It is further hoped that eugenics will furnish, besides, much else, important information regarding sanitation, housing, quarantine, the management of hospitals and schools, and the like.

*v. also Prof. W. E. Castle's paper in the Popular Science Monthly, July, '05.

*Henry Frowde, Publisher.

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It is good to have such a science; but some of the things it would set forth are rather unnecessary. We don't, for instance, need abundant statistics to prove that lunatics, idiots, and the depraved should not marry. Although such people do sometimes marry, in point of fact, the practice is very rare indeed. And that for the simple reason that the instinct of the race is against it. Nature sees to it that the fit select only the fit for union; natural selection and the survival of the fittest are natural laws which are bound to be a great deal more efficacious in eliminating our racial dead wood. Nevertheless, we are oftentimes—though not nearly so often as we should be—called upon for advice with regard to heredity; wherefore we should have as clear notions as is possible concerning this most difficult subject. I should be heartily gratified if in this paper I have contributed anything to this end.

GHOSTS THAT STARE AT US.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.
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THERE are staring at us as doctors the glassy eyes from sunken faces—like so many ghosts—of dying friends and patients whom we half-heartedly gave up in the start of broken health because we believed that they had "gone into the decline" of tuberculosis, and therefore little help remained for them. We doubtless prescribed an expectorant for the early cough, we scarcely had courage to suggest the stereotyped formula of daily punishment with dosages of cod liver oil or whiskey and raw beef, because of the gloomy prognostication of their significance. We played the professional imbecile to while away the interval of time betwixt the start and the end without throwing across the weary way any real barrier of defence against the hastening foe to vital energy. We smothered from recognition the dismal facts as long as possible rather than disclose the gangrenous bite of alarm about the then supposed inevitable.

To an extent we supposed that we were wise—to a greater extent we were cowardly and foolish. Fortunately for the trustful public, the long day of tucking down the fringe of so grave an issue as developing consumption with evasive words, meanwhile smudging our subterfuge with croton oil and porous plasters, is now more happily drawing toward its close. Between talking things and doing things timely and worth the while arises an oasis of relief freed from the clouds of daily despair and the sombre sunsets of hastening death. With the isle of rescue in near view, now is the time for everybody, including backward and dubious doctors, to cultivate alertness of capacity that will actively tend to aid in repressing and arresting the ravages of consumption among us. The awakening spirit is actually now here. The nature and effective management of the insidious disease is now being practically comprehended. Interest in the only available means of prevention and early relief and cure is being aroused broadcast. Tuberculosis is the form of disease afflicting population that exceeds every other. Then the restraint of tuberculosis requires and deserves pre-eminent attention by every physician and in every home in America. Every practitioner of medicine should become an antituberculosis teacher. Every

householder should become a guardian against the development and repetition of the great white plague in the home. For this one time again I raise my voice for the rally, and put my shoulder to the wheel of advance. No more surrenders to superstitious creed of heredity. Everybody forefended by the orthodox solace of natural hygiene. The seal of zealous instruction persistently impressed upon public attention. At it, and at it perpetually for the ransom of humanity. What a stupendous work to be done! Most worthy and ennobling the task! Silent but heroic and irrepressible revolution in the relief of human suffering, the reduction of grievous invalidism, the shielding of labor values and family support! Less simpering over hair-splitting theories—more quickstep in sensible action on lines that timely avert calamity!

All cannot be accomplished at one bound. But the steady pace of time will gradually measure out the opportunities to those who will begin now to watch for them and who will faithfully utilize every early chance to rescue life. Example is the inspiring test of sincerity and effectiveness. I therefore revert to the impetus of example to all who only need to discern the royal way by which others take hold of a practicable reformation in the management of tuberculosis among local or nearby population. In three preceding recent papers I dwelt particularly on the great work of the Phipps Institute in Philadelphia for the study of tuberculosis through receiving for care and treatment incurable cases of consumption, and by analysis of the condition of each patient admitted, also further by the physical revelations of autopsies at the finale. A glance was also given at the Tuberculosis Exhibition lately held in this city. Reference was also made to the general purpose and plans adopted by the Pennsylvania Society for Prevention of tuberculosis by creating branch dispensaries, classes among work folks, church folks, labor clubs, for the spread of needful instructions, of timely personal hygiene, of oversight and regulation of diet calculated to check or arrest the disease in its incipency.

Since there is no short way of reaching either the beginning or the end of this most important subject, I shall cut right across to its middle at its present stage and attitude. It has been said of President Roosevelt that he is a man who *does* things. By recent evidence there is another man prone to do things rather than merely talk of things. His name is Worcester, formerly rector of St. Stephen's Episcopal Church in Philadelphia, but later of Emmanuel Church, Boston. Fortunately for society, Rector Worcester is a broad minded man, who does not limit his brain interest only to pretty parables for the souls of mankind, but devotes forceful consideration also to the physical welfare of the temple of the soul while abiding on earth. Rev. Worcester had in his church a mental wide-awake, Dr. J. H. Pratt, who planned a tuberculosis clinic as a charity feature of the Emmanuel Church home mission work, by which the tuberculous poor in Boston community might receive appropriate treatment and care in their homes. That humane movement was started about three years ago, and it is reported that thousands of patients have been helped, and eighty per cent. of them cured since the tuberculosis clinic was organized. Rector Worcester was so actively interested in the cause that he desired to see this field of

usefulness extended. He therefore visited Philadelphia a few weeks ago especially to recommend the work to his former congregation in this city, and urged that the members get busy at organizing church tuberculosis clinic or classes after the model of the Emmanuel plan. Backed therefore by certain influential members, the St. Stephen's clinic in Philadelphia was organized without delay—the meeting of patients being held in the S. S. building adjoining the church. The chosen medical director, the chief nurse, and the principal parish visitor are in active charge. Two meetings are held weekly. The number in attendance increases at each meeting. On Mondays the diagnosing medical examinations of patients are made. On Thursdays instructions are given to the patients as to how they are to help to cure their own disease and to prevent its spread to others. Reports are also received from patients on that day as to their daily doings in conformity with the regulations of the clinic. None who fail to follow instructions of the physician in charge, and to obey the printed regulations furnished to patients, will be allowed to continue in the class. Homes are visited and inspected. Modes of living are examined into, and errors corrected. In simple manner the doctor explains the group system of treatment, insists that patients remember that medicine alone cannot cure tuberculosis, and that patients for themselves must largely win their cure by strict observance of hygiene and sanitary laws that promote the upbuilding of health in general. It is particularly noted that all sputum must be burned daily as the most sanitary way of disposing of the troublesome waste matter expectorated. When going about the streets or on the cars, each patient carries a supply of small paper napkins to receive all expectorated matter. The collection of this is temporarily deposited in small paper bags carried in the pocket for the purpose, and burned at once on returning home. It is taught at this clinic, reinforced by a tract furnished by the Pennsylvania Society for the Prevention of Tuberculosis, that if the patient is careful with his sputum he is harmless to others, but also that the patient should never swallow any of his sputum for fear of transferring the disease from the breathing organs to other parts of the body. Furthermore, the hands should be washed and the mouth well rinsed before partaking of food. Soiled wash clothing and bed linen should be first boiled before washing. Avoidance of fatigue, plenty of rest, regularity of habits, continuance of fresh breathing air and plenty of good wholesome nourishment to build up the physical condition are radical essentials for prevention, also for arrest of the disease. Patients must always have nine hours' sleep, retiring before ten p. m.; must sleep alone and with windows of the sleeping-room kept freely open day and night, in spite of ordinary change of weather, so that the patient will not inhale the same air twice. It is also now taught that tuberculosis is NOT hereditary—and is found in children of consumptives chiefly because of the unsanitary environment which the children shared in common with their parents. It is also in the plan to serve the poor patients liberally with good eggs and milk as convenient forms of concentrated nourishment to overcome tendency to loss of weight.

This condensed outline of home mission work among

persons disposed to tuberculosis has been written and is here printed in behalf of the unfortunate consumptives everywhere who may be reached and helped, and should convey sufficient idea of how to start a class clinic to repel encroachments of consumption wherever such field of service is needed. Secretary Wallace Hatch, of Pennsylvania Society for Prevention of Tuberculosis, will assist to organize group classes and can furnish important printed material for use of patients. Besides St. Stephen's, other churches have started similar system of clinics—Church of Crucifixion, Calvary Presbyterian, Centenary Methodist Episcopal. Representatives of labor unions are taking up the practical work of relief in similar manner. Every considerable town in the United States could afford to give decisive aid to prevent waste of valuable life by tuberculosis because of ignorance and inaction in regard to available agencies of prevention and rescue. Every intelligent person can soon learn how to avert consumption. Live as much as possible in fresh air. If not out of doors, then put the fresh air indoors continuously by open windows. Live where the air is not full of poison from smoke stacks, locomotive gases and housetop chimneys. Avoid shut-up sleeping rooms. Avoid inhaling the decay exhaled into crowd air. Abstain from all crowded places where the rebreathed air from promiscuous lungs in large numbers is the only quality of breath drawn into the lungs. Persons threatened with consumption are often completely rescued by taking to outdoor life. I have urged many to forsake stuffy office nooks, or villainous store air, and get outdoors, even to walk the streets as canvasser from door to door, or to start truck raising on a patch of open country ground. The Evening Telegraph of to-day prints a brief of a circus rider who saved his life by selling newspapers on the street. The air under the circus tent is always surfeited with impurities from crowded breaths. Suffering with consumption, this circus performer in the Barnum show, engaged in the sale of newspapers on the streets of Altoona, Pa., last spring. He now has announced that he is entirely cured and that the open-air life did it. Shouting "Extra" cured him. There we are with the very simple problem! The houseling, hemmed in with heater gas, gas stoves, coal oil stoves, growing thinner and coughing constantly, drifts into tuberculosis and dies prematurely. The huckster on the open streets has good lungs and is hearty and well. I know an old gentleman who had a large newspaper route in this city on which he delivered his morning papers to patrons and made his collections weekly till he was eighty years old before he retired. It is not asserted that he had consumption when he started; it is proven that his health remained well preserved amid all variations of weather the year round, while many other men and women went under with tuberculosis.

Since it has been my lot personally so long to combat quite alone against the medical vogue of believing that the bacillus is the original potency in causing prevalent forms of disease, it is but just to the interests of square reasoning to note here that the germ fallacy, like a straggling sheared sheep, is browsing from the top of the prominent hill along the down slope of the other side, and disappearing from the horizon of its infatuating doctrine. Dr. Walsh, of Phipps Institute,

specialist in the treatment of consumption, who has had over seven thousand cases of tuberculosis to pass under his study during the last seven years, when lately addressing the members of the womans' club in this city is reported to have declared: "It is not necessary to go out into the country to get fresh air. Sunlight is a marvellous germicide. While spitting upon the streets should be stopped absolutely, there is an exaggerated idea of the danger from dust" (dried sputum mingled with outdoor dust). "As a matter of fact, the tubercular germs in the street will not survive the rays of an August sun more than twenty minutes." So we see that the street-spitting fallacy, for doctrinal theory, has been over-estimated; it is a bubble of unseasoned sense.

I understand that Dr. Walsh teaches that all consumptive cases are considered curable if caught early and treated with clean breathing-air and sanitary environment generally. Dr. Pratt, in connection with Rev. Dr. Worcester's church classes, Boston, to repeat, affirms that of each one hundred patients enrolled, there have been eighty per cent. of cures. Fresh pure air beats all the drugs in the world as the normal remedy for abnormal state of lung cells and blood corpuscles coincident with tuberculosis. The Philadelphia Bureau of Health recently reported a very pronounced increase of cases of consumption—181 new cases in a week! While winter house heating, with closed windows, with much re-breathed close gassy air indoors naturally causes insufficient oxygenation of the blood cells, and proportionally aggravates and burdens disordered lungs, nevertheless the marked increase of cases of consumption reported is largely due to the discovery of numerous cases at the tuberculosis classes now being organized, and where patients with cough and failing health have applied for gratuitous expert medical examination. Thus the more cases found and helped, the sooner is the spread of the insidious plague reduced. But now I have a gentle criticism. Dr. Walsh, as reported, in his address made the illogical statement that heat from coal stoves, coal grates, does the air no harm, while heat from gas and oil stoves does great harm. The doctor evidently has but half studied the problem of fuel gases indoors. He seems oblivious to the fact that soot-choked stove elbows and down draughts by high winds pushing across chimney tops, back the poisonous carbonic oxide gases from coal fires into the breathing-air of houses with serious harm. An open grate will throw out with its heat more fuel gas than does a stove well managed. General Washington contracted his fatal quinsy by inhaling the gas-poisoned air from his open grate fire in his bedroom. Of course, he was bled and re-bled in the death-trap of that room at Mt. Vernon till death ended the tragedy. The relative harmfulness of all coal fires in the home and in the business place depends on the chimney draughts by which the gases of combustion are either drawn clearly up the flues to the outdoors above the house, or whether obstruction, heavy air, lack of draught, cause them to drift into the house. There remain yet many essential facts that tuberculosis specialists need to learn about protection of lung integrity. The lecturer further strained his deduction if correctly reported: "If smoke were dangerous, Pittsburg would not have the lowest rate of mortality from consump-

tion of any of the cities!" Without looking up the statistics, we may qualify that assertion with the facts that the smoke of Pittsburg is thrown into the outdoor air. Furthermore, the majority of the families residing at Pittsburg do not cluster in the smoky district, but locate upon the expansive elevations beyond, where the air is relatively clean and fresh. But withal, Pittsburg has occasion to make contest against the great white plague. The Central Board of Education has adopted a program for regular instruction in tuberculosis prevention measures through a weekly class conducted by sanitary officers.

Returning now to practical work in Philadelphia, the free tuberculosis dispensary of the State Department of Health, recently put in operation here, presents instructive demonstration. Since it was opened less than two months ago, there have been two hundred and forty-seven applicants, and over two hundred persons have been under treatment. The local medical director and a staff of four medical assistants conduct the work. There are three visiting nurses to call at the homes of patients. Each physician of the staff has his own hours at the dispensary for clinical service, and each has his own organized class of patients. On Saturdays there are two clinics. To patients who are accepted on account of their poverty, two quarts of pure milk and six eggs are supplied daily by the dispensary—a sufficient appropriation, I understand, having been provided by State legislation. Patients are weighed fortnightly to test the degree of their physical improvement.

But we doctors must get at it, and do something for these unfortunate tuberculous cases when it is worth while. If I had a voice of thunder and if my words could have the gleam of lightning I would appeal to the medical province of to-day: Let us wake up! Wake up to the common debt we owe for the rescue of the uninformed and therefore unvigilant people about us who are unconsciously drifting into the snares of tuberculosis—and that unnecessarily! Referring to State progress, the governor of Pennsylvania takes this cheerful view: "A new year is greeting us. A great day is at our doors if we have the cleverness to know how to turn the knobs and clasp hands with the welcome messengers of deliverance of population from the blight of the great white plague, tuberculosis." Until recent years too many people have been inhaling stink in shut-up rooms without knowing that they were thereby smiting the vitality given to sustain life. When a student at Dickenson Seminary in my youth, I sometimes visited the room of a fellow student who could help me in my Latin. The room air there smelled actually sour with carbonic acid exhalations in limited space with no ventilations. Ten years later I saw a brother of this talented student and inquired how he was. "Dead—died several years ago of consumption!" was the reply. Seminaries and colleges may teach book hygiene to classes, but practical hygiene means actual visitations to the rooms of students to press into actual grasp the meaning of life-saving ventilation. The Fresh Air School, where scholars study all day with their wraps on, with large windows open on all sides, is said to be now in operation at Providence, R. I., and has proved the same success here in America as it has already proved in Germany and England. This may

be an overstrained adoption of fresh air service. But the day may be hastened when every home, as well as office building and school-house that is built, will be scientifically provided with ventilators which shall supply plenty of fresh air and carry off steadily the used-up, worn-out air. Louise Satterthwaite hits the problem of sanitary breathing-air: "In our trolley-cars we find a stale and human tang which shows that it is quite unfit to breathe and every window is steamed with the breath of those therein. In every steam car you enter there is a degree of warmth exactly like a hothouse—and ventilation quite ignored. In our school-rooms the air reeks of the physical personalities as well as clothes of the pupils. In the business offices there is also too much warmth and quite too little oxygen. In the homes of the people an open door or window is regarded as little short of suicide by the majority of people. But they fail to catch the lesson of the various infirmities which attack us in winter. Grippe, which lays low its thousands, pneumonia and bronchitis and chronic throat affections—ordinarily looked upon as unforeseen afflictions; when all the time we could have breathed better air and found ourselves immune. We must have oxygen or fall sick and perhaps die."

Women and children are special sufferers from close disease-breeding house air. Many women are slow suicides—queer with follies. If they take a pew in church and detect a slight waft of ventilation reaching them, they immediately twist and flinch because of it, but will nevertheless waft with their fans a constant breeze of promiscuous crowd breaths into their faces and fancy it is a legitimate refreshment! Barbarous custodians of lungs and life! And the men show no more consistency. They seem equally oblivious to the defenses of blood integrity and reliance of health. I see them enter churches and immediately remove their overcoats before waiting to ascertain anything about what is the temperature of the audience room. Then if they feel a perceptible movement of ventilation, instead of resuming the warmth of overcoats for body heat, they stare right and left to discover which window is admitting fresh air, and fly to the window cord and close out the freshening atmospheric invoice that will help to prolong life and defer a funeral. An office lady secretary cries out: "I am acquainted with a number of men in a business way, and only one of them knows what the term 'fresh air' means. Among the offices in our building there is a large room where fifteen or twenty men have desks. Go into it when you will, every window will be found shut and the atmosphere thick with tobacco smoke. Open a window, and you will hear remonstrances from every worker within twenty feet of it. 'Do you want to give a fellow pneumonia?' they demand, and hastily push up the sash so that the supply of air is cut off. And every man of them is afflicted in season and out with grip and colds and other ills which come from living or working in a vitiated atmosphere. If no one came in to open the door, would a half dozen men put into a small room together sit there and talk and smoke until they had consumed all the oxygen and died of suffocation?" This is the type of men who, ignorant of natural cause, die early of pneumonia, of consumption, of heart failure. A few years ago in Philadelphia, a bridge on a very

prominent street had to be switched off from trolley use because of serious damage that corroded and endangered its iron support because of locomotive gases and smoke from the railroad beneath. Pollution of the air laden with sulphurous fumes poured out beneath had done the damage. If polluted air, under the open sky, acting upon massive metal work protected with paint, destroyed the safety of a powerful bridge, what must be the destructive effects of such polluted air upon the lungs of the human beings who are compelled to breathe it? In the city of London it is estimated by competent authorities that nearly half a million tons of sulphuric and sulphurous acids are yearly emitted into the air from chimneys, and that more than twelve hundred tons of solid matter—soot and hydrocarbons—are yearly deposited from the same source upon the square mile of the city. What chance has the sensitive lungs of population in such vitiated environment? The pollution of the air in New York and Philadelphia is not so great as in London, but the difference is one of degree and not one of kind. Our factory mill district of Kensington quite equals the pollution of London air. It is there that consumption is the most prevalent destructive to life. It is hoped that the antituberculosis clinic among the operatives in this our Kensington mill district will soon bring down its rate of deaths by consumption.

As physicians, we have a great contest before us. But our lieutenants must be found in the public. Members of the Civic Club here turn to women for assistance in flanking the march of consumption. Establishment of special classes in public schools for tubercular children, the maintenance by the city of a department of books on cure and prevention of tuberculosis in public libraries, and the organization of employment bureaus to find healthful occupations for patients discharged from sanatoria as means of combating the white plague is now under discussion. Dr. Wallace Hatch, of the Pennsylvania Society, urged the women's co-operation, and advocated the awakening of universal interest in measures for prevention of the spread of tuberculosis and the arrest of its development among the young, by conducting special classes in schools, where infected children could be properly cared for, instructed in hygienic principles and taught how to overcome the incipient dangers of the disease. The women were advised to spread the idea of the maintenance of shelves of books specially devoted to consumption by the free library to catch the attention of youths of both sexes who are warned by weak chests and suggestive cough that lung danger is lurking along their way. As result of the ghostly contagion propaganda proclaimed by certain specialists who were unable to comprehend the spread of consumption except by germ infection, opposition has frowned on the admission of tubercular pupils in public schools. But discretion should not strain itself into hysteria. In Chester, Pa., a thirteen-year old girl was lately excluded from school attendance by the Board of Education on account of suspicion that she had tuberculosis, and a legal row resulted for her restoration to school privileges—with what result I have not learned. But the superintendent of education in Philadelphia affirms that no consumptive child has been barred from school by the Board of Education in this city. The physical condition of pupils in

Philadelphia is trusted to the discrimination of the medical inspectors appointed by the Director of Public Health and Charities. In case of a child suffering from advanced tuberculosis, the parent is advised to take it out of school. Superintendent Brumbaugh holds the view that outside the question of prevention is that of the welfare of the afflicted child. That knowledge bought at the cost of health is purchased too dearly.

Public meetings to discuss tuberculosis are evidence of the earnestness awakened among the people. This spirit should be cultivated until vigilance and measures of relief become universal. Why should any form of disease be allowed to reign unopposed by practical means of repression! The brain of man is selfish, stubborn or stupid that will not exercise thought and action for the repression of the ghostly scourge known as consumption. Every time that I see the glassy eyes of a consumptive glaring so pathetically at me, I wonder how on earth doctors could so long have fancied that medicines put into the stomach could successfully serve as substitute for pure and fresh air inhaled into the lungs! Recently representatives of workers in almost every industry and trade in Philadelphia were present at a conference held in lecture room of the College of Physicians to plan methods of combating the white plague in factories and workshops. It was decided to distribute instructive literature on the subject and to place large cards relating to prevention in factories. Representatives of forty trades joined in this popular demonstration to outline plans for the campaign to be pushed vigorously in the working places of this city. Wide-awake delegates denounced the State Bureau of Factory Inspection for the lax way in which the bureau inspects unsanitary mills. Child labor in mills was especially condemned as a menace to the health of the young. Dr. Hatfield, president of the State Society, conducted the meeting. The secretary of the Journeymen Barbers' Union, made a practical hit when he said: "I can give this society work for two years to come among the barber shops of Philadelphia. Our trade is a powerful factor in spreading tuberculosis under conditions in certain shops. Many of them have not running water. They use the same towel on dozens of faces. Floors are not scrubbed often enough."

Madame Laurence Fiedler, who is considered by many the most advanced woman student in France of the social problems of her sex, has come to New York on an important mission for the French Government—to study American methods of fighting tuberculosis. She declares herself particularly impressed with what she calls our indirect method of resisting the disease. She visited Riverside Hospital, donned a nurse's outfit and watched every stage of treatment followed in that institution. She thinks that we are not yet doing all possible in a curative way of resisting the white plague. The Pennsylvania Society for Prevention intends to start an "after case department" by card index of consumptives who have left sanatoria convalescent, but should be provided with suitable employment to prevent relapse. The patient will be followed and looked over every six months, and reports made to the sanitarium where treated. One object is to see that convalescent patients are not overtaxing themselves, or taking up

work too arduous for their strength, or not sufficiently remunerative to procure the special diet needful to sustain normal weight. A circular letter to the stores of the city, asking for help in maintaining the relief work has been issued under the auspices of the finance committee consisting of men of substantial means, whose interest and practical activity will add financial and moral support to the greatest crusade against a subtle persisting disease that haunts our modern life.

This article has recited enough to show that the most important fact for us as doctors to realize is that in the repression of consumption, much needs to be perseveringly done, DONE, instead of merely and quite uselessly exploited as hot air that dies in its birth. Personally I am but one of the interested brethren. But I meet with heart and hand every other brother who will dignify our profession by energetically joining the present crusade to banish the ghosts of consumption that haunt our professional pathway.

1726 North Twenty-second street.

HEAT THE ULTIMATE.

BY F. B. BRUBAKER, M.D., MIFFLINBURG, PA.

THE theory of the conservation of energy ascribes all cosmic phenomena as dependent upon the sun, an examination of whose energy resolves itself into three forms, viz.: heat, light and chemical action, the visible spectrum simply marking an interval of radiant action, in which the rays are so related to our organization as to excite the impression of light. But beyond this interval in both directions, radiant power is exerted, obscure rays fall, those falling beyond the red being powerful to produce heat, while those falling beyond the violet are powerful to promote chemical action, and these latter chemical rays can actually be rendered visible, while a like analogy exists between light, and radiant heat, producing substantial identity.

In short the sun's rays are the ultimate source of every motion which takes place on the surface of the earth. By its heat are produced all winds, and those disturbances in the electrical equilibrium of the atmosphere which give rise to the phenomena of lightning, terrestrial magnetism, and the aurora. By them the waters of the sea are made to circulate in vapor through the air, and irrigate the land, producing springs and rivers.

By them are produced all disturbances of the chemical equilibrium of the elements of nature which by a series of compositions and decompositions give rise to new products and originate a transfer of materials.

Even the slow gradations of the solid constituent of the surface, in which its chief geological change consists is due, on the one hand, to the abrasion of water or rain and the alternation of heat and cold in the form of frost, or on the other to the continual beating of sea-waves agitated by winds, the result of solar radiation. The effect of oceanic currents, though slight in abrasion, is powerful in diffusing and transporting the matter abraded, and, when we consider the immense transfer of matter so produced, the increase of pressure over large spaces in the bed of the

ocean, and diminution over corresponding portions of the land, we are not at a loss to perceive how the elastic force of subterranean fires thus repressed on the one hand and released on the other, may break forth in points where the resistance is merely adequate to their retention and thus bring the premonition of volcanic activity under the general law of solar influence.

And thus it is that we see that solar energy may disappear and be converted into mechanical motion and when that motion is arrested the energy which produced it is restored.

This is conservation.

The whole stock of energy or working power in the world consists of attractions, repulsions and motions. Men regard gravitation as the representative of forces that act at a distance, and cohesion and chemical affinity as the representative of those forces which, although very powerful, only act through a very small interval of distance. Therefore every particle of the universe attracts every other particle with a force depending jointly upon the mass of the attracting and of the attracted particle and varying inversely as the square of the distance between the two.

Gravitation may be described as a very weak force, for it takes the mass of the whole earth to produce the force with which we are familiar at its surface and the presence of a large mass of rock or mountain does not produce any appreciable difference in the weight of any substance.

In elastic force we have another instance of the visible arrangement of matter, for, when a cross-bow is bent, there is a visible change produced in the bow, which as a whole resists this bending, and tends to resume its previous position.

In electricity we have the energy of visible motion when two wires conveying electrical currents in the same direction attract each other when, for instance, two circular currents float on water both going in the direction of the hands of a watch. Now, here there is, in truth, a lessening of the intensity of each current when the motion is taking place, for we know that when a circuit is moved into the presence of another circuit conveying a current, there is produced by induction a current in the opposite direction and hence we perceive that, when two similar currents approach each other, each is diminished by means of this inductive influence—in fact, a certain amount of current energy disappears from existence in order that an equivalent amount of the energy of visible motion may be produced.

Thus we have visible energy of actual motion, in the planets and meteors, in the cannon ball, the storm, the running stream, and many other instances. Again we have the visible energy of position in a stone on the top of a cliff, in a head of water, in a rain cloud or cross bow bent, or in a clock wound up. But beyond the forces which animate large masses of matter we have those which subsist between the smaller particles of which these large masses are composed, the atom and molecule, of course, representing the smallest conceivable particles of matter. The smallest entity retaining all the properties of a given substance is the molecule, and nothing smaller than this is entitled to be called a compound, but if we continue this subdivision further the molecule separates

itself into its chemical constituents, these being as in the case of sand, silicon on the one side, and oxygen on the other. Thus we arrive at last at the smallest body which can call itself silicon, and the smallest which can call itself oxygen. Now these constituents of the silicon molecule are called atoms, so that we say that the sand molecule is divisible into atoms of silicon and of oxygen. Take two molecules of sand. These, when close together, have a very strong attraction for each other. It is in truth this attraction which renders it difficult to break up a crystalline particle of sand.

But it is only exerted when the molecules are near enough together to form a homogeneous crystalline structure for let the distance between them be somewhat increased, and we find that all attraction between different particles of sand, even although they are very closely packed together, has disappeared. In like manner the integrity of a piece of glass is due to the attraction between its molecules, but let these be separated by a flaw, and it will soon be found that this very small increase of distance greatly diminishes the attraction between the particles, and that the structure will now fall to pieces from the slightest cause. Now these examples are sufficient to show that molecular attraction or cohesion, as this is called, is a force which acts very powerfully through a certain small distance, but which vanishes altogether when the distance becomes perceptible, strongest in solids, diminished in liquids, it may be said to have little attraction in gases.

Let us next consider the mutual forces between atoms. These may be characterized as even stronger than the forces between molecules, but as disappearing still more rapidly when the distance is increased. Take carbon and oxygen, two substances which are ready to combine to form carbonic acid, whenever they have a suitable opportunity. In this case each atom of carbon will unite with two of oxygen, and the result will be something quite different from either. Yet under ordinary circumstances carbon, or its representative, coal, will remain unchanged in the presence of oxygen, or of atmospheric air containing oxygen. There will be no tendency to combine, because although the particles of the oxygen would appear to be in immediate contact with those of the carbon yet the nearness is not sufficient to permit of chemical affinity acting with advantage. When, however, the nearness becomes sufficient, then chemical affinity begins to operate. We have, in fact, the familiar act of combustion, and as its consequence the chemical union of the carbon or coal with the oxygen of the air, carbonic acid being the result. Here, then, we have a very powerful force acting at a very small distance, which has been named chemical affinity, inasmuch as it represents the attraction exerted between atoms of different bodies in contradistinction to cohesion, which denotes the attraction between the molecules of the same body. Now, it is important to remember that we must treat cohesion and chemical affinity exactly in the same way as we treat gravity, and just as we have energy of position with respect to gravity, so we may have as truly a species of energy of position with respect to cohesion and chemical affinity.

Of the inner quality that enables matter to attract

matter we know nothing, and the law of conservation makes no statement regarding that quality. It takes the facts of attraction as they stand, and affirms only the constancy of working power, which power may exist in the form of motion, or it may exist in the form of force with distance to work through. The former of course being named dynamic energy, and the latter potential energy, and the constancy of the sum of both is affirmed by the law of conservation.

The convertibility of natural forces consists solely in transformations of dynamic into potential and of potential into dynamic energy and these are incessantly going on.

The energy of visible motion is changed into the energy of position when a stone is projected upwards above the earth. A weight shot vertically upwards continues to rise; it starts with a certain amount of the energy of motion, but as it ascends, this is by degrees changed into that of position until, when it gets to the top of its flight, its energy is entirely due to position.

There, is, therefore, no disappearance of energy during the rise of the weight, but merely a gradual change from one kind to another. It starts with actual energy, and this is gradually changed into that of position, but if at any stage of its ascent we add together the actual energy of the weight, and that due to its position, we shall find that their sum always remains the same.

Precisely the reverse takes place when the weight begins its descent. It starts on its downward journey with no energy of motion whatever, but with a certain amount of energy of position; as it falls, its energy of position becomes less, and its actual energy greater, the sum of the two remaining throughout until, when it is about to strike the ground, its energy of position has been entirely changed into that of actual motion and it now approaches the ground with the velocity, and, therefore, with the energy, which it had when it was originally projected upwards. But the shooting of a weight upward, by which energy is expended, and the falling of a weight downward, by which energy is restored, is but one of the many ways whereby a transmutation of one form into that of another form takes place, pre-eminently among which stand compression, percussion, and friction. What becomes of the weight that was shot upwards and afterwards falls and, striking the ground, comes to rest? What becomes of the energy of the smith's blow after his hammer has struck the anvil, or what of the energy of the cannon ball after it has struck the target, or what of that of the railway train after it has been stopped by friction at the brake wheel? Is the manifest energy of each destroyed, or does something else make its appearance—any other form of energy?

This brings us to the great fundamental law underlying all other law in the physical universe, viz.: *When motion is destroyed, heat appears; and heat has been defined as that form of energy into which all visible terrestrial motion, whether it be rectilinear, or oscillatory, or vibratory, is ultimately changed.* Therefore heat itself is to be recognized as a form of motion, and yet it is necessary to distinguish between the sensible motions produced by heat and heat itself. Heat is not the clash of winds, it is not the

quiver of a flame, nor the ebullition of water, nor the rising of a thermometric column, nor the motion which animates steam as it rushes from a boiler in which it has been compressed—all these are mechanical motions into which that of heat may be converted; but heat itself is molecular motion. The molecules of bodies, when closely grouped, cannot, however oscillate without communicating motion from one to the other, and again there is in all bodies a certain amount of internal viscosity, a property which prevents perfect freedom of vibration, and which ultimately converts vibrations into heat. It being shown that heat is a mode of molecular motion it becomes self-evident that whenever the visible energy of percussion, friction, or whatnot is apparently destroyed, heat appears. We must remember that the motion of the mass as a whole, has been transformed into a motion of the molecules of the mass, and that this motion, no matter how intense, is executed within limits too small to be visible. In the case of solid bodies, while the force of cohesion still holds the molecules together we must conceive a power of vibration, within certain limits, to be possessed by the molecules. We must suppose them oscillating to and fro, and the greater amount of heat we impart to the body, or the greater amount of mechanical action which we invest in it by percussion, compression or friction, the greater will be the rapidity and the wider the amplitude of the atomic oscillations.

Now nothing is more natural than that particles thus vibrating, and ever, as it were, seeking wider room, should urge each other apart, and thus cause the body, of which they are the constituents, to expand in volume. This, in general, is the consequence of imparting heat to bodies, viz.: expansion of volume. By the force of cohesion the particles are held together; by the force of heat they are pushed asunder.

Therefore, we have two antagonistic forces or powers on which the molecular aggregation of the body depends—a duality which permeates all of inorganic and organic law. Let us suppose the communication of heat to continue, every increment of heat pushes the particles more widely apart, but the force of cohesion, like all other known forces, acts more and more feebly, as the distance between the particles which are the seat of the force is augmented, as therefore the heat strengthens, its opponent grows weak, until finally the particles are so far loosened from the rigid thrall of cohesion, that they are at liberty, not only to vibrate to and fro across a fixed position, but also to roll or glide around each other. However cohesion is not yet destroyed but is so far modified that the particles, while still offering resistance to being torn directly asunder, have their lateral mobility over each other's surfaces secured. And this is the liquid condition of matter.

Now in the interior of a mass of liquid the motion of every atom is controlled by the atoms which surround it. But when we develop heat of sufficient power even within the body of a liquid, the molecules break the last fetters of cohesion and fly asunder to form bubbles of vapor, and if, moreover, one of the surfaces of the liquid be quite free, that is to say, uncontrolled either by a liquid or solid, it is quite easy to conceive that some of the vibrating superficial molecules

will be jerked quite away from the liquid, and will fly with a certain velocity through space and thus freed from the influence of cohesion, we have matter in the vaporous or gaseous form. But it will at once be perceived that to change matter from one to the other, of the three ultimate forms in which we recognize it, something has to be added to it, not indeed in the form of matter itself, but something in the form of force or motion, and that something is heat. It is a very remarkable fact that all permanent gases expand by almost precisely the same amount for every degree added to their temperature.

To the science of atomic and molecular motion all things material eventually resolve themselves, whether they be inorganic or organic. Inherent in both we have a dual force, the one attractive, and the other repulsive, and since bodies become expanded by friction it is evident that their corpuscles must move or separate from each other. Now a motion or vibration of the corpuscles of bodies must be necessarily generated by some such force as friction, percussion, etc., therefore we may reasonably conclude that this motion or vibration is heat, or the repulsive power. Heat, then, or that power which prevents the actual contact of the corpuscles of bodies, may be defined as a peculiar motion, a vibration, of the corpuscles of bodies, tending to separate them.

Again it must be entirely evident that inasmuch as there exists no condition of absolute cold, that is, that bodies which we classify as cold are only so to us, and still contain heat, have so contained, and will continue to contain, throughout all time, *it must therefore be plain that heat from this circumstance alone, must be, and is, coexistent with matter itself, and that when matter is in any way disturbed in its vibratory motion, either by addition to, or molestation of, or subtraction from, its inherent tension, heat appears.* Heat therefore becomes an ultimate force into which all other physical forces may be changed, and because of being inherent in matter itself may be converted into any of the same.

According to our power to erase lines of demarcation from the universe in so far does our view broaden, and as we have remarked in former essays, *nature draws no such lines.* To my mind it is but the working out of a single law, whose complexity lessens or broadens according to our mental grasp of the same. I love to think of nature, and all natural law, as transparent, the restfulness of which in thought completes the law. The law that divides the elements into family trees, and where we begin to trace out *individuality and variability and recognise it as merely a stage in the form of matter which is undergoing continual alteration.* The appearance in places of an element, or compound of an element, where it did not exist before, that is, the production or generation by descent, whose interplay of inorganic forces we, in the ultimate, ascribe to heat.

The hospital ship, "Relief," with "its magazines stored with pills, and high explosive seidlitz powders in its handling room, within easy reach of the ammunition hoists," has been ordered to sail from San Francisco and join Admiral Evans' fleet at Magdalena Bay. Surgeon Charles F. Stokes, who is in command, is, in accordance with the Navy Department's orders, to have the same general rank as the commanding officers of the other ships of the fleet.

A PATHOLOGICAL EXHIBIT.*

BY AP MORGAN VANCE, M.D., LOUISVILLE, KY.

A DENO-CYSTOMA. The patient is a maiden lady (Miss F.) over sixty years of age. My only reason for reporting the case is that the cyst when removed weighed over fifty pounds and was extirpated through an incision not over three inches in length. The woman was out in the yard of the infirmary on the seventh day after the operation, and returned to her home sixteen miles distant in an automobile on the ninth day. The method of suturing now employed by most of us makes it possible for our patients to get out earlier than heretofore, that is the use of the tier method by cat gut, plain No. 1 being used in the peritoneum, chronic No. 1 in the fascia, and plain No. 1 in the skin.

Nephrectomy. Mrs. T., aged forty-three years, married twenty years, mother of three children. This patient gave the history that as early as fourteen years of age she had more or less trouble referable to her left kidney region. This fact was elicited upon inquiry as to why Baunscheidt scars were present over this loin.

I was called to see this lady by Doctor Hunt, of Louisville, and obtained the following history of her present trouble. While sitting on her porch in the afternoon, feeling as well as usual, she was seized with sudden severe pain in the left side about on a line with the umbilicus. In a fainting condition she was carried into the house, and I saw her forty-eight hours later. She had possibly two degrees elevation of temperature at the end of twenty-four hours after this sudden attack of pain. If the abdominal signs had been in the right side, I would have taken it for an active case of appendicitis, as evidenced by excessive tenderness and the abdominal guard that was present over the entire left side. The pelvic examination was negative. I gave it as my opinion that this was a case of obstructed ureter probably due to a calculus or possibly to a kink, and believed that the evidence of the presence of a tumor was due to kidney distention by accumulated urine. Palliation for a day or two was recommended.

I was recalled at the end of forty-eight hours and after another physical examination became convinced that my first supposition was correct, i. e., that it was a case of obstructed ureter, and advised prompt surgical intervention. The patient took two days to consider the matter, which brought us to Thursday afternoon; she positively refused to submit to operation on Friday, or even to be moved to the infirmary on that day, but was taken to the infirmary Thursday night and on Friday morning she had a severe and long-continued chill, her temperature rising to 105 1-2 degrees Fahrenheit, and the pulse to 160. On Saturday morning, September 14, about eight o'clock, when we were preparing for the operation, I was told by the nurse that the patient had passed no urine for twelve hours. Upon introduction of a catheter there was no urine found. Her temperature was then 105 1-2 degrees F., pulse 160, and she was in absolute extremis. This condition of things was explained to the husband, the opinion being given that his wife would die very soon, but if he was willing to assume his share of the responsibility I was willing to make an attempt to remove the offending kidney, Doc-

*Before the Medico-Chirurgical Society, November 8, 1907.

tor Spears stating that he would administer the chloroform if I wished it.

The patient was removed to the operating room in almost a moribund condition, her pulse not only being extremely rapid, but exceedingly feeble. A nephrectomy was completed in fifteen minutes, one ligature being applied to the pedicle which included not only the blood vessels, but the ureter. The kidney, upon exposure, was found to be enormously distended; a large-sized trocar being introduced, the distension was so great that immediately following this there occurred an immense rush of urine mixed with pus by the side of the instrument flooding the entire field of operation. The only thing remaining after evacuation of this large amount of fluid was an immense sacculated kidney, which was quickly removed. At this stage of the operation Doctor Spears was constantly giving notes of warning, that the woman was fast approaching dissolution, and advising that I take no time for the usual toilet. This, however, I did, closing the wound with five interrupted silk-worm gut sutures.

The patient was hurried to bed, the bed was elevated at the foot, and saline infusion commenced at once by the rectum, eight or ten ounces of saline solution with two ounces of strong coffee being administered each hour. At the end of twelve hours she was able to take fluids by the mouth, and following the suggestion of my friend, Doctor Rominger, of this city, I began the administration of acetozone. Eight grains of acetozone dissolved in a pint of water and given by the mouth as rapidly as the patient was able to take it. During the first twenty-four hours she secreted twenty-two ounces of urine, and from that time on made a rapid and satisfactory recovery. The large-sized silk ligature placed upon the pedicle was removed on the tenth day by use of a little mechanical contrivance already described by me elsewhere.*

This woman returned to her home at the end of the fourteenth day after the operation with the wound healed, and since that time she has rapidly improved in health. She has gained wonderfully in flesh, in fact, more than her normal weight. At the present time, two months after the operation, she is in perfect health.

In closing the report of this case, I would like to emphasize the importance of using this remedy—acetozone—in these suppression cases. Since Doctor Rominger, in consultation in a similar case, used it, I have a number of times demonstrated its value in these conditions.

Hysterectomy. The next patient was referred to me by Doctor Strickler, of Elizabethtown, Ky. A young woman, twenty-five years of age, married, whose abdomen presented a tumor about the size of a full term pregnancy, gave the history that this tumor had been in the process of development for about twelve months, that one month before I saw her she went into a state of collapse and came near dying, something having "given away" in her abdomen. She slowly recovered from this shock and was brought to the St. Joseph Infirmary, Louisville, still being in a condition of invalidism.

On making a physical examination I made the diagnosis of ovarian cystoma and advised immediate operation, which was consented to and performed on July 18th, 1906. After the abdomen was opened it was

found there were two cysts, one springing from each uterine horn and being coalesced above. Evidently the cyst on the left side, which was much larger than the other, had been ruptured, peritonitis resulting, and the cyst wall completely encapsulating the uterus. The adhesions were so dense that upon their separation so much hemorrhage occurred and such a tremendous raw surface was exposed that I immediately determined the best and safest procedure was to do an hysterectomy. This was carried out, and the pelvic floor carefully repaired over the uterine stump.

The patient made an uninterrupted and rapid recovery, returning home at the end of three weeks, being up and about for a week before leaving the infirmary. I saw and examined this woman one year after the operation, and she is in perfect health, not having had any of the nervous phenomena which usually occur after such operations on patients of her age. This demonstrates to me the probability that the development of these cystomata pathologically destroyed the ovarian tissue to such an extent and so early that the menopause was established before the operation. I am inclined to believe that this occurs often, as it has been my observation that where both ovaries are involved in decided cystic degeneration and operations are performed for their removal, that the nervous phenomena which usually follow oophorectomy in young subjects do not occur.

Teratomatous Dermoid. The next three cases are of the same class, viz., teratomatous dermoids. Mrs. C., aged twenty-two years, married. She gave the history that she had suffered with pelvic troubles since she reached the age of puberty, never having been a complete invalid, but suffering more or less all the time, with symptoms referable to the pelvis. She consulted me on account of an abdominal enlargement which she stated had made its appearance in the last seven weeks.

Upon physical examination a symmetrical tumor was located which was about the size of an eight months pregnancy. Her statement was that she did not believe she was pregnant, because it did not seem likely that abdominal enlargement from pregnancy could occur that rapidly. Pelvic examination revealed a tender solid growth in the right side of the pelvis. The major portion of the enlargement, however, was evidently cystic in character. My opinion was that it was not a pregnancy, either uterine or ectopic, but the enlargement consisted of a cystic tumor with a solid element which rested low in the pelvis. Operation was advised, and performed October 18, 1907.

Upon exposure of the growth through a five inch incision, it was found, like the preceding case, to be one of double cystoma. There were no adhesions, and after ligating both uterine horns an immense double cyst was delivered, two gallons of fluid having been previously evacuated by means of a trocar. On examination it was found there was a large teratomatous dermoid of the right ovary, and an adeno-cystoma of the left. The solid part demonstrated before the operation was the dermoid lying in the right side of the pelvis. The dermoid contained the usual elements which go to make up these growths, viz., bone, hair, and sebaceous material.

This woman returned to her home near Indianapolis, Ind., at the end of the eighteenth day after the operation, well along in her convalescence. Having in mind

* Surgery, Gynecology and Obstetrics, March, 1907.

the previous case, I gave it as my opinion that she would likely escape the nervous phenomena ordinarily following double oophorectomy in the young, as there seemed to be no ovarian tissue left on either side.

Teratomatous Dermoid. Miss B., aged twenty-two years, referred to me by Doctor Johnboeke, of this city, gave the history that for two years she had noticed a tumor in her abdomen. It was found on examination to be decidedly right-sided in its position. As the patient was a virgin pelvic examination was not made, but in my opinion the diagnosis rested between cystic degeneration of the ovary with some solid elements, and a fibroid tumor of the uterus which had undergone cystic degeneration.

On opening the abdomen an apparently solid growth presented, and until it was delivered through the incision I thought the operation was going to be an hysterectomy for uterine fibroid; but the tumor proved to be one of those remarkable instances of teratomatous dermoids, bones and adult teeth being perfectly apparent even through the cyst wall. The growth involved the right ovary and was the size of an adult head. The woman made an uninterrupted recovery and returned to her home the sixteenth day after the operation was performed.

On section of the growth typical dermoid contents in large quantities escaped, revealing a large amount of bony material, many teeth of adult size and apparently perfect in shape embedded in masses of soft bone.

Teratomatous Dermoid. Mr. W., referred to me by Doctor Weatherby, of Middletown, Ky. This patient was between seventy-five and eighty years of age. His right testicle presented an enlargement as big as a man's two fists. He stated that the growth had existed for a number of years, but had rapidly increased in size recently, and that its enlargement had been accompanied by considerable pain. Diagnosis of cystic degeneration was made, and removal of the testicle advised. The operation was performed in May, 1907. The man made an uninterrupted recovery and returned home one week after the operation. This case is merely reported because of its nature, and to go along with the two preceding.

Upon opening the testicle it turned out to be a teratomatous dermoid, that is, it contained the typical dermoid structures, hair and bony material.

Mammary Cancer in a Male. This case is illustrated by the left mammary gland removed from a man aged sixty-five years. It is a typical scirrhous cancer and is reported on account of the rarity of such cases, it being the first breast cancer that I have ever seen in the male, in over thirty years' experience.

The patient made a rapid recovery from the operation, and I believe the cure will be permanent. There was no evidence of extension, and of course the surrounding structures were widely removed.

Pigmented Sarcoma. Miss O., aged twenty-six years, sought advice in regard to a pigmented growth below and behind the internal malleolus of the left foot. The growth occupied the entire space between the internal malleolus and the tendo Achilles, evidently involved the tendon, and filling up the depression even with the ankle joint. She stated that this discolored spot had existed for a year, but recently she noticed that a tumor had formed and that it developed rapidly. There was no pain, neither was the patient crippled as a result of the

growth.

My opinion was that it was a case of melanotic sarcoma, and the patient was referred to my friend, Doctor I. N. Bloom for his opinion. He was doubtful and wished to keep her under observation for a while. He sent her back to me in four weeks with the statement that he was unable to make a diagnosis, that he thought it rested between a tuberculous process and one of malignancy. At that time I was very strongly of the opinion that my tentative diagnosis was correct, that it was a very malignant form of sarcoma, as it had developed rapidly in size and the discoloration had decidedly increased. I then advised that a piece of the growth be removed and submitted to a pathologist, and upon his report would largely depend the decision as to radical operative treatment. Accordingly a small section was removed under local anesthesia and submitted to Doctor J. E. Hays, who reported that it was a spindle celled sarcoma, of the pigmented variety, and very malignant. Operation was advised, but the patient procrastinated for two weeks, then finally consented.

The question then arose whether to do a high amputation in the hope of more certainly forestalling a recurrence, or whether the location of the tumor principally below the ankle joint would justify amputation below the knee, allowing the great benefit of this point of selection in the way of future locomotion to outbalance the difference in risk of recurrence. This was freely discussed with the patient, my opinion being that the advantage of a better stump would over-balance the small difference in the danger. The limb was amputated five inches below the knee joint, and at this date, three months after the operation, she is having an artificial leg adjusted.

This form of malignant disease, pigmented sarcoma, in this location, in my opinion is rather rare. In my entire experience I remember to have seen but three such cases. All of them involved the left leg, all were in females, and all occurred below the knee. The two cases that I observed previous to this one declined amputation, the growth was freely excised in each case; one of the patients died of pelvic involvement within six months; the other lived five years, and then died of recurrence in the pelvis; no local recurrence took place in either case after the excision.

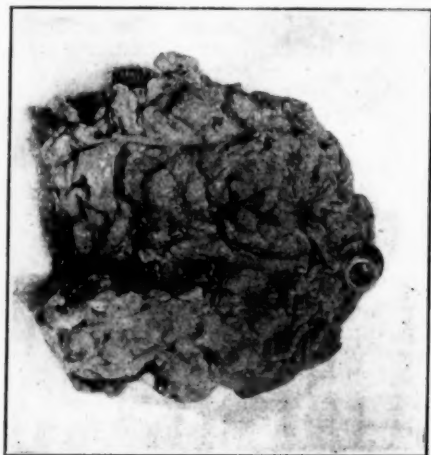
Sarcoma of the Jaw. Mrs. H., aged fifty-one years, mother of several grown children, referred to me by Doctor Stewart of Orleans, Ind. This patient presented a large tumor at the angle of the jaw on the left side; it was fully as large as a man's fist, nodulated, and rather firm to the touch. The history was that the tumor was first noticed twelve years before, that she had considered it cancer, and had applied two years ago a "cancer cure" paste. The result of this was a deep cicatrization like that produced by the burn of fire. The woman was well-nourished. Her statement that the growth had developed more rapidly during the last year than previously led me to believe that it was originally a fibro-adenoma, and that it had undergone some form of malignant degeneration. Removal of the growth was advised, which was done on September 31, 1907, at the St. Joseph Infirmary. An incision was made in front of the auditory canal down the neck to the clavicle and the tumor proper, which was encapsulated, was exposed and rapidly enucleated. As the deeper parts were reached evidently the phrenic nerve was in some way

interfered with, respiration became very much labored, and the further enucleation was rapidly accomplished, and the tumor removed. The pedicle was torn away from the second cervical vertebra. There was little hemorrhage, the wound healed rapidly, and the woman returned home in six days.

Microscopical appearance of the growth goes to show that it is probably a sarcomatous degeneration of a fibroadenoma, as was supposed prior to the operation. A microscopical examination has not been made.

Cancer of the Intestine. Mr. C., aged forty-seven years, was referred to me by Doctor A. P. Dowden, of Eminence, Ky., diagnosis having been made of a malignant tumor involving some part of the intestinal tract. Examination revealed a tumor about the size of a large lemon located to the right of the umbilicus; it was movable, and without any particular tenderness.

The history obtained was that the man had suffered from constipation for a period of two years; there was emaciation and vomiting; the bowels moved with the greatest difficulty; eructations of gas from the stomach constantly annoying. Doctor Dowden's opinion as to malignant growth of the intestine was concurred in by me, and exploratory operation advised. The patient agreed, the only condition being that after we had opened his abdomen, if it was apparent that his life could not be prolonged by the operation, to close the incision and let him live as long as he could without removal of the growth.



CASE X. Cancer of Colon. Specimen photographed after being hardened in solution of Formalin.

An incision four inches long to the right of the umbilicus extending from this point upward was made through the thin abdominal wall, and the tumor immediately presented. Examination proved it to be an apparent malignant growth of the colon situated to the left of the hepatic flexure possibly four inches. It was easily delivered from the abdomen, and as there seemed no chance in the world of our doing the patient any good by leaving the growth, I determined to remove it, and do an end-to-end anastomosis. This was accomplished by what I would designate as a modified Woelfler procedure, that is, interrupted silk sutures through all the coats of the bowel, the knots being made inside

of the lumen, until the whole surface had been sutured; then a continuous Lembert chronic catgut No. 1 suture was inserted from mesenteric angle to mesenteric angle going over the bowel; then engraftment of tags of mesentery and also omentum over the site of this line of closure, the abdomen being closed without drainage.

This man made an uninterrupted recovery, excepting that at the end of ten days he had an attack of vomiting which continued for an hour or so, large quantities of a dark greenish fluid being regurgitated. Doctor Chas. G. Lucas, who had seen the patient in consultation previously, was called in and drew off from the stomach with the stomach-pump about three quarts of greenish looking watery material. The stomach was washed out with saline solution, and from that time on the man's convalescence was normal and he returned to his home at Eminence, Ky., on the fourteenth day.

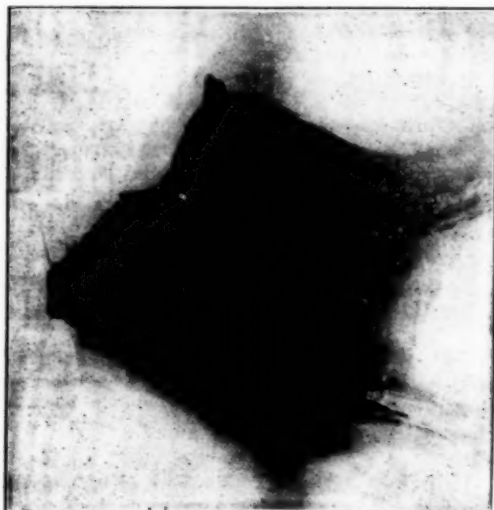
This operation was performed July 11, 1907. In a letter written to me by Doctor Dowden November 4th, he says: "I saw Mr. C. on Saturday afternoon; he now weighs 150 pounds; the most he ever weighed was 160 pounds; before the operation his weight was 140 pounds. He seems to be in perfect health, and can eat anything but 'turnip greens,' these produce diarrhea. He only complains of soreness in that side after an unusually busy day; he is attending to his work as a farmer and dairyman."

I removed in this case nine inches of the colon, and the man has made a perfect recovery. In looking back I can recall many such cases as this, where after opening the abdomen I have considered the case inoperable because of extensive involvement of the intestine in malignant disease, and closed the abdomen without doing anything. Hereafter when I encounter conditions of this kind, which are absolutely hopeless without radical surgical work, I propose to complete the operation in every instance where it is in any way possible. Report of the pathologist pronounces the growth in this case carcinoma of the intestine.

Cancer of the Intestine. Mr. S., aged fifty-one years, was referred to me by Doctors Wilson and Lucas of this city. The history obtained was very similar to that given in the preceding case, that of constipation, eructations of gas, and general ill-health extending over a period of two years. The patient had always been a delicate man, but had never been incapacitated for his calling, that of printer and publisher.

Examination of the abdomen revealed a large growth situated below and to the left of the umbilicus; it was movable to a considerable degree. Diagnosis of malignant disease of the intestine was made. Operation was advised, and performed at the Norton Infirmary October 26, 1907. When the abdomen was opened between the umbilicus and the pubes this tumor of the small intestine immediately came into view. The picture presented made it appear as if removal of this large growth was absolutely impossible, but after prolonged effort it was delivered from the abdominal cavity, and the utter hopelessness of the man's condition if it was left determined me to make the attempt to remove it. This was extremely difficult because of the extensive intestinal involvement primarily, and then the further complication of kinking and firm adhesions of the uninvolved intestine below. The difficulty was made very great indeed by the fact that sufficient mesentery could not be exposed to enable the work to be done outside the

cavity, requiring that this part of the excision should be accomplished within the abdomen. Clamps were applied and the intestine divided well away from the growth on either side, and the mesenteric excision continued down as far as was possible. The same procedure as described in the previous case was then carried out, viz., an end-to-end anastomosis. One point in the technique which seems to me a good one, is in closing the mesenteric part of the wound to approximate the two sides as to allow the first continued suture to bring together on one side the peritoneal surfaces, thus making it unnecessary to re-suture this part of the mesenteric approximation. The same procedure, a modified Woelffler end-to-end anastomosis was done, as already mentioned, the great omentum being engrafted or rather tacked over the finished intestinal work. The operation up to this point was accomplished absolutely without soiling of the cavity, and the intestine was returned to the abdomen and the wound closed without drainage by means of catgut tier sutures.



CASE XI. Specimen cut open showing obstructed lumen.

This patient was very enemic and had lost much flesh, being at least twenty pounds lighter than normal, and the question of nutrition was one requiring careful consideration. Rectal alimentation was commenced immediately on his return to bed, as the necessary fasting before administration of the anesthetic had shown decided effect upon what little resistance he seemed to have. The injection of six ounces of saline solution with two teaspoonfuls of Valentine's meat juice were continued each hour for three days, then alternating hours for three days longer, water being allowed at the end of twelve hours by the mouth. At the end of four days egg albumen and sherry wine were given by the mouth. On the sixth day he was allowed some bouillon, the egg albumen and sherry being also continued. After this period his liquid nourishment was supplemented with beefsteak, chewed, buttermilk, and junket, in gradually increasing quantities until the tenth day, when he was removed to his home. Since then and up to the time of this report he has steadily gained in strength.

At the end of the fifteenth day he went down stairs to dinner, and his convalescence has been uninterrupted by accident or otherwise. His bowls move every other day by the aid of a simple enema, and he is rapidly increasing in weight and general nutrition.



CASE XI. Specimen as appeared upon removal.

Measurement of the specimen shows that twenty-three inches of uninvolved intestine was removed, and that portion involved in the cancerous growth represents at least six inches more. Dissection reveals that the lumen of the intestine was almost closed by the malignant process; it hardly admits an ordinary probe. Examination by the pathologist proves the growth to be a typical adeno-carcinoma.

The Radium Cure of Lupus.—Sir Wm. Ramsay has announced by cable that rodent ulcer "can be cured with certainty by exposure for a few minutes at intervals to rays emitted by radium bromide." Dr. Wm. J. Morton, of New York City, has, however, antedated the authorities of the Middlesex Hospital, from whom Sir William's favorable reports come. In the *Medical Record* of Nov. 9, '07, Morton records several cases of complete eradication of facial lupus by radium, together with gratifying results obtained in treating more deep-seated cancers. Morton prefers radium to the X-rays, in that its dosage can be made more accurate. The radium rays, moreover, have greater velocity and penetrating power. He continues to treat special cases of cancer by X-rays and by trypsin and amylopsin. He was one of the first to declare that radium constitutes "probably the best modern treatment for lupus vulgaris."

The Bubonic Plague.—Many historic pestilences have erroneously been considered the bubonic plague; but Papon, in his treatise "De la Peste," has no doubt presented an authentic list of forty-one plague epidemics which occurred in the fifteen centuries before Christ, among the peoples inhabiting the regions bordering on the Mediterranean, one hundred and nine during the first fifteen centuries of our era, and forty-five from the years 1500 to 1720. These pestilences were particularly prevalent during the benighted Middle Ages; but it were a sad mistake indeed, and a very costly one, to imagine the world has outgrown them. Statesmen and others having profound responsibilities in all parts of the civilized world are to-day much concerned over them; and two international conferences have been called in order that measures might be devised which, while inflicting the least possible injury on commerce, might be expected to protect countries inhabited by the Caucasian races from the disease. The *Treatise on the Plague*,* which Dr. W. J. Simpson, of King's College, London, has prepared, at the request of the Syndics of the Cambridge University Press, comes therefore very opportunely. This work is peculiarly authoritative by reason that its author was Health Officer at Calcutta, assisted the Cape Town government during the 1901 outbreak, and was commissioned by the Colonial Office to investigate the plague in Hongkong.

Simpson very well epitomizes in his last chapter our present knowledge of this dreadful disease: The essential cause is the *bacillus pestis*, which Kitasato and Yersin, working independently, discovered during the Hongkong epidemic in 1893-4. There are bubonic, septicæmic, pustular and pneumonic forms; the last of these is very infectious. There is a connection between rat plague and human plague; rats as well as man may disseminate the disease, which, both in rats and in man, is seasonable. Certain animals other than rats take plague; the disease in man and in animals may take on a chronic form. Haffkine's serum, subcutaneously injected, has much prophylactic value. There is no treatment against virulent plague when it is once established in the organism.

One would think that with the discovery of the essential cause the difficulties in the way of scientific prevention would have been obviated; this has, however, not been the case. The plague is similar, in the early stages, to certain other diseases; and even when suspicion arises, responsibility for the announcement of the plague is often shirked. Thus, in Bombay, in 1896, much valuable time was wasted in attempts to discredit the discovery of the pestilence. The *bacillus pestis*, moreover, so strongly resembles the *diplococcus pneumoniae* that hesitation is not unnaturally felt in early cases, where the symptoms have not as yet become clearly manifested. Again, in San Francisco a case appeared clinically to be typhoid fever and was accepted as such until, three weeks later, the autopsy and the microscope demonstrated the plague. In another case a mistaken diagnosis of lobar pneumonia was made. Many patients do not exhibit buboes; and many have apparently no connection with each other. The symptoms of the pneumonic and septicæmic types are especially obscure; so that when plague is feared all lung affections should be examined bacteriologically.

* Publ. Putnams, N. Y. City.

Rat and mouse extermination are absolutely essential to prophylaxis. And the advisory committee appointed by the Secretary of State for India, the British Royal Society, and the Lister Institute find that the rat flea will readily bite man; disinfection, to be effective, must therefore destroy not only the rat, but the *pulex cheopis* as well. Other suppressive measures are: to isolate the plague stricken from the healthy, to evacuate infected houses until they have been thoroughly disinfected, and complete supervision by the authorities over departures by rail and ship.

Opium in Acute and Chronic Diseases.—Yeo (*Practitioner*, May, '07) reviews therapeutic uses, points out contraindications, and emphasizes the superiority of one preparation over others. Opium should not be used in the hypersensitive who have weak hearts; a large dose may enfeeble a weak, degenerated myocardium. In such cases a cardiac stimulus should always be adjuvant. Yeo especially deprecates the use of opium in insomnia due to pain; here the more common hypnotics combined with an analgesic often serve the purpose. But for pain accompanied by spasm, as in colic, no drug is equal to opium; especially is this so in asthma, when we combine it with atropine. Yeo prefers the local administration of opium where the seat of pain is accessible; for instance, an opium liniment to a painful joint, opium wash in conjunctivitis, opium suppositories or enemata where indicated. We should be cautious in prescribing opium by the mouth; nausea may be avoided by the combination of laudanum with aromatic spirits of ammonia. An intense congestive chill such as often begins a severe "cold" is frequently dissipated by combining from one-fourth to one-third of a grain of morphine with spirits of nitrous ether (5i), a few drachms of a solution of ammonium acetate and an ounce of camphor water. Yeo prefers Dovers' powders in respiratory conditions. Heroin, however, combined with expectorants, is best suited to bronchial and laryngeal affections. Codein works best in circulatory disturbances, especially in the dyspnoea and sleeplessness complicating valvular insufficiencies.

General practitioners in Birmingham, observes our English namesake, are having rather a bad time contending with the numerous hospitals and Medical Aid Friendly Societies; private practice is dwindling, "and the time has arrived to do something lest worse should follow." A "public medical service benefit" has therefore been started, membership of which is restricted to patients unable to pay ordinary fees as private patients. Any practitioner of a year's standing is qualified to join provided he does not attend any sick clubs. Branch institutions are to be formed as the need arises. Each applicant for membership as a benefit member must be passed by one of the staff, who is responsible for fitness. A fee of at least twopence per week is to be paid by each patient; and members are to be remunerated by a division of profits at stated intervals. Each patient is entitled to a choice of the medical attendant. The medical benefits do not cover confinements, consultations, diseases arising from misconduct, serious injuries, dentistry, surgical operations, anaesthetics and the supply of bottles and appliances. Besides, certain definite charges will be made for night visits and extra services of various kinds.

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PSYCHOPATHIC RULERS.

IT is a striking paper having the title which begins these observations, which Dr. Allen McLane Hamilton has contributed to the March number of the *North American Review*. It is certainly the most potent and the most melancholy impression which the reading of history makes upon us—that of the miseries suffered by the subjects of incompetent and vicious rulers. Almost every page of old world history teems with examples to this effect. And we must conclude that most of the mischief has not been worked by normally minded rulers who have been cruel or unjust; but by regal or imperial monomaniacs, or paranoiacs, as we term them to-day, who may have been well-intentioned enough. For examples to illustrate this thesis we do not have to revert to ancient times, to consider Nero or Caligula, or Tiberius, nor to medieval Europe; all periods in history, modern as well as others, will serve us in the same sad way.

Historic writers, up to very recent years at least, have almost never been trained in psychiatry; they have almost never taken into account the often dismal part which disease in rulers has played in the welfare and destinies of peoples. They often allude to the weaknesses and the immorality of individual potentates, but they disregard the origin of such defects. Modern students of mental disease, however, find no difficulty in tracing much regal incapacity to actual disease, or to degeneracy, and Hamilton well expresses the regret that there is so little specific information from a medical viewpoint in most historic records. Many an old chronicler, indeed, has invested a super-excitable and unbalanced ruler with transcendental heroism or supernatural attributes, who to-day would be recognized as the victim of an abnormal psychism.

In the light of our present-day knowledge of psychia-

try the records of any great European royal stock enable us to speculate with fair certainty as to the possible usefulness, or the to-be-expected incompetency, of a member of a line who has come into power. We can now, from the abundant data at hand, study successfully the psychopathic strain of several great ruling families—the Bourbons, the Hapsburgs, the Oldenburgs and the Romanovs. The Bourbons, for instance, evince widespread degeneracy; especially was such a notable lunatic as Joanna the Mad responsible for much of the moral and intellectual Bourbon decay. Joanna's great-granddaughter, Marie de Medici, married Henry IV., "the great and good king" of France, and the progeny immediately presented the taint of insanity which subsequently cropped out very extensively in the French and Spanish lines. With one exception the children of this pair were psychopathic. The whole French and Spanish lines, from the notorious Joanna and her weak husband, Philip the "Handsome," were degenerate and afflicted with mental disease. In Russia, Peter the Great was an epileptic, Peters II. and III. and the first Nicholas were mentally defective; the most conspicuous example of Romanov insanity was presented by Paul, son of Catherine II., herself a psychopath. Paul's cruelty was the direct result of delusions of persecution. The history of European reigning families is replete with such examples.

Yet we need not look among rulers for examples of mental unbalance such as have pernicious effects upon the community. Among any body of men are found some who differ from their fellows by reason of their conduct and inability to accommodate themselves to ordinary social conditions; such men are looked upon as queer and eccentric. Psychiatrists are familiar with such cases, especially those manifesting the disorder known as *paranoia reformatoria*, which is expressed in erratic attempts at social betterment when none are needed, and in disorderly efforts which usually fall far short of accomplishment. The ideals of such men are oftentimes high enough, yet their studied desire to help and reform others often ends in annoying disregard of those who do not need development, or protection, or correction, and who may even look upon such reformers as "mischievous meddlers." Such altruism may be quite as offensive and dangerous as actual self-interest or immorality, and as detrimental to the welfare of the community as actual wrong-doing. "The apparent unselfishness of the mentally unbalanced is almost as much fraught with danger to a people as corrupt self-interest." An erroneous fixed idea, no matter how lofty, if irrational and obstinately entertained, may be highly dangerous in its consequences to the community. The true tests here, as Hamilton sets them forth, are: the existence of consistency and continuity of thought and action, the presence of sufficient and proper basis

for the exercise of will, the realization of the conditions of existing order which are believed in and accepted by the majority, the avoidance of disorderly impulses which are inconsistent with proper self-conduct, and the regard for the general social comfort of one's kind.

HYGIENE AT PANAMA.

THE work of Dr. Gorgas and his associates at Panama is one of the wonders of modern civilization. During the year 1907 there has been not a single case of bubonic plague or of yellow fever. The last case of the latter disease occurred in Panama nearly two years ago. There was but one death from smallpox, and there was a 50 per cent. reduction from 1906 in malaria and dysentery, pneumonia and such other grave diseases. The Panama death rate in the last year was more than 31 per cent. lower than that in 1906. The report in which these figures are given cover only the canal zone and the cities of Panama and Colon, the regions under the jurisdiction of Dr. Gorgas.

This canal zone and these cities have up to recently been the unhealthiest spots in the western hemisphere; now there are many regions in these United States not nearly so salubrious. From time immemorial the Isthmus of Panama has enjoyed the gruesome fame of being a vast graveyard for those not indigenous to the soil, who have come thither. Humboldt, a century ago, after a visit in which he studied the conditions carefully, expressed his belief that the Isthmus must always be cursed by yellow fever and malaria; the former, as he understood it, was caused by the decaying molluscs and marine plants on the beach at low tide; the latter by foul emanations (mal-aria) from over-rank vegetation. Froude, that master of superb and expressive diction, declared—and rightly enough, no doubt—that nowhere else on earth was there concentrated in a single spot so much foul disease, such a hideous dunghheap of moral and physical abomination. But all that has been changed. Science has vastly improved upon the etiological conceptions of Humboldt's day, and the conditions which Froude described no longer exist. One of the most important reasons why the great De Lesseps failed at Panama was by reason of the hopeless unhealthiness of the isthmus in his time.

Now, however, the colossal achievements of our American colleagues have made the completion of the canal within the next few years a certainty; and it were impossible to estimate the blessings which future generations will enjoy by reason of their work. To the Englishman Manson belongs the discovery that filaria sis was conveyed from man to man by the culex; and it was Manson's countryman Ross, who demonstrated that malaria—or mosquito fever, as we should now say

—was similarly conveyed by the anopheles. But it was reserved for our Reed to rob yellow fever of the ravages it has for many decades been making among our coast cities, by making evident its transmission by the stegomyia. The crowning achievements have been those of Gorgas and his associates, who have so brilliantly been applying the knowledge and resources of modern science to the hygienic redemption of the canal zone and the adjacent communities.

PROPHYLAXIS IN THE UNITED STATES ARMY.

WE easily recall that, at the end of the Japanese conflict with Russia, Dr. L. L. Seaman demonstrated the amazing efficiency of the Japanese medical department, and how graphically he contrasted this with the almost equally amazing laxity of the medical regime in the United States military service. Dr. Seaman's one-man propaganda was conducted so forcefully, so eloquently and upon so great a basis of fact that the most pessimistic would have hoped, as a result of it, for the institution of a reasonable amount of reform. Nevertheless a bill, which has recently been introduced in Congress to improve the medical department of our army, is defective in that it fails, despite Dr. Seaman's presentments, to provide an adequate sanitary service. It is precisely in respect of sanitary precautions that we have hitherto fallen short, as Dr. Seaman has shown anew in the comparative statistics he has set forth in his article in the *New York Medical Journal*.

We recapitulate data which our readers will easily recall from Dr. Seaman's previous papers: The Crimean campaign lost in allied forces 50,000 from disease, as against 20,000 from casualties in battle. In the Russo-Turkish war of 1877-8 there succumbed from disease 80,000 men, or four times as many as died in battle or from wounds. In our Mexican, as also in our Civil war, three men died from disease to one from wounds. The French sent 14,000 men to Madagascar in 1894; of these only 29 were killed in action, and more than half the rest died of disease. The last Boer war in South Africa lost the English ten men from disease to one from wounds. In our Spanish war "fourteen lives were needlessly sacrificed to ignorance and incompetency for every soldier who died on the firing line or from wounds"; to be precise, 293 deaths from battle casualties, and 3,681 from disease. On the other hand, Dr. Lynch, our military attache in Japan, reported officially to our War Department, that she lost 58,887 killed in battle or dead from wounds, as against 27,158 from disease—more than two to one. Besides which, they brought 67,000 sick Russian prisoners from Manchuria to Japan, and there nursed them back to health.

Japan had got experience in her war with China ten years before, when her soldiers died like flies from the neglect of sanitary precautions; but we show no desire to emulate her either in her prophylaxis or in her foresight. Our lawmakers seem quite unable, for one thing, to comprehend that the business of our medical department is to prevent even more than to cure disease. Why is this elemental tendency of modern medicine not grasped? Is it possible that it is lost sight of in the political expediency of establishing and swelling up a plethoric pension list? Our almost bloodless conflict with Spain, the actual hostilities of which lasted less than six weeks, has cost us last year in pensions \$3,471,000. And that this will certainly increase in arithmetical, if not in geometrical, proportion, we may be assured from the fact that over 18,000 additional claims are now pending before the Pension Office, although the Cuban army of invasion numbered but 20,000 men.

ATHLETIC AND SOCIAL LIFE IN THE HIGH SCHOOL.

IN our time, boys went to the high school to study and recite, went home when school was over, and played with their companions in local "gangs," or engaged in such useful occupation as devolved upon them, without any conception of the high school as a center of interest, much less of social life. Only incidentally were friendships formed by reason of the academic association, and in only a few ways and on a few occasions, mainly limited to the latter part of the senior year, was there any manifestation of esprit de corps.

At present nearly every athletic, fraternal and institutional activity characteristic of college life is duplicated in the high school. Except that the students are younger and more under the control of faculty and parents than college students, and that there is not the disruption by distance of earlier social ties, very little difference is found, except in the disproportionate number of girl students and in the relatively greater part which they take in school functions of all kinds. A very pretty and chivalric feature which, so far as we know, is limited to American city high schools, is the more or less formal affiliation of fraternities and sororities, every boy of one considering himself the brother of every girl in the related sorority. So far as we have observed, this relation, though occasionally tending to the formation of cliques, has exerted a restraining and refining influence, has been especially helpful to students of somewhat unfortunate social status—providing of course that they have been received into societies—and has tended to diminish rather than increase the sentimentalism that all co-educational institutions have to guard against, but which, after all, has been rather a bugbear than a reality.

We must confess to having somewhat of a prejudice toward the appropriation of college methods by high school students. As a wise friend remarked to the uncle who was contemplating a set of engraved calling cards for his little niece, "Leave something for her to enjoy when she grows up." But our personal prejudice rests mainly on a comparison with the modern young man and woman of the world, possessed of evening clothes and society manners and aplomb, of our own former self, who has just a diffident, awkward little boy who studied algebra and Caesar at certain hours.

Whether the shortening of the period of childhood is wholesome only prolonged experience can show. The fact remains that the present high school student is more mature than in our day. He is certainly as healthy physically and, so far as we can judge, intellectually and morally. Nine-tenths of such students must enter upon active work without attending college. It is not unreasonable to suppose that their future life will be happier, broader, less individual and more fraternal by having enjoyed the general social and institutional life which formerly belonged only to college students. As to the tenth that do go to college, it may very well be that the zest of novelty attending such activities may not be so important as the training to enjoy them on a larger scale and yet in a temperate manner, by reason of the academic experience.

HYGIENE AND SENTIMENT.

BRIGHT sense of proportion is most desirable—indeed, it is essential—in the infinitely complex civilization of our day; and perhaps under no circumstances more so than in the introduction of the principles of modern hygiene. Many of the rules we seek to inculcate are directly opposed to sentiment and the normal play of the emotions. And one would be sadly lacking in a knowledge of human nature who would not make allowance for these psychic factors in life. Physicians have, for instance, become somewhat overzealous in their condemnation of the passing of the chalice from mouth to mouth during the communion service, and individual cups have been advocated in a rather excited way. But this plan of individual cups has been adopted almost nowhere; and rejection of it is based upon instinctive common sense. Those who partake of the communion service generally come prepared; the cleanliness which is next to godliness is most in evidence on such occasions. It is hardly conceivable that persons whose lips or mouths are tainted would willfully take part and jeopardize their fellow-worshippers. There is possibility of infection; but the possibility is almost infinitely slight. It is a good paraphrase that "man shall not live by prophylaxis alone." The

spiritual sense is, after all, entitled to some consideration. The loving cup which is passed from mouth to mouth at kindly gatherings is condemned; and here with somewhat more reason. Yet sentiment invariably wins out on every occasion when the loving cup is forthcoming. Sentiment is very ready to take chances; and, after all, the chances under the circumstances are not very "long" ones. Every guest to whom such a cup is passed has probably during the day preceding the festivity taken a dozen greater risks of infection. Hygiene would require that before it is taken from the cellar we must remove from an old bottle of port or claret the dust, the cobwebs and the mould, which must contain a deposit alive with possibly appalling bacterial potentialities. But no one who would be deserving to drink such port would here pay the slightest attention to hygiene. Those Olympian aristocrats who have taste and experience know full well that in drinking old port they are engaging in a function, a ceremony, of which the inhibition of the glorious fluid is but a part. There are always other factors in the ceremony: the occasion for it—a marriage engagement or a wedding; appropriate and heartfelt felicitations; the warm and pleasant drawing room, and, as important as any others (as giving visible evidence of the goodness, the venerable age and the richness of the wine) the cobwebs and the mould. And where, after all, is the risk? It is not the mould and the cobwebs which are drunk; nor is the drinking sufficiently prolonged (a melancholy reflection) for the likelihood of any pathogenic development. The same observations would apply to many other things in life. For instance, observes the *Lancet*, hygiene would condemn the highly seasoned and oil-stained meerschaum or briar pipe, but sentiment holds that there is no pipe like it for a cool, well-flavored and pleasing smoke. And sentiment here, as elsewhere, wins out; for, besides these considerations, such a pipe suggests numberless associations, and the very sight of it recalls pleasant experiences of a personal and intimate sort. Hygiene has tried to banish the open fire, but romance and the sense of comfort (apart from warmth) which the glowing grate gives has here given hygiene the right-about.

There is, however, much in which hygiene is justly gaining apace, yet even here humanity must sustain distinct losses in the poetic and the agreeable emotions. We now dispense in great degree with curtains and carpets, and live in rooms with walls and floors polished like a well appointed dairy. There shall be no smoke in the landscape when hygiene prevails; and undoubtedly this is well. Nevertheless the painters and etchers must then give up the search for outlines aesthetically blurred and suggestive shadows. Hygiene requires the removal of all dirt-films and the scrupulous cleansing of all surfaces; and this, too, is well; yet the sentimental

would prefer a little the mellow age of old dwellings, even though they be a trifle dusty, to our modern brand new stone, brick, or tile. Jellies are to be banished from our food lists because they are ideal culture media for bacterial propagation; yet most people would be willing to risk the possibility of infection from them.

AN HONORABLE ACTION BY THE COLORADO EXAMINING BOARD.

THE Colorado license to practice is now accepted by fourteen states whose licenses, of course, are accepted in Colorado. But the Colorado examining board have announced a policy whose justice must appeal to all and which, we trust, will be adopted widely. This board takes the ground that, whether a given state accepts the Colorado license or not, should not affect the individual physician seeking a license to practice in Colorado. Provided the new resident is of good moral and professional standing and has a license of a state maintaining a satisfactory standard, or has been in practice since 1900, and has been duly registered, he will be licensed without formal examination in Colorado.

It may very well happen that the standards of one state exceed those of another. In such a case it is plain that the state of lower standards should accept the license of the other. Undoubtedly such a course is somewhat humiliating to the pride of the state, but it is the manly course to pursue. If the assumption of inferiority is correct, its open admission by the board of the state in question will be a powerful lever in securing legislation to raise the standard. If it is incorrect, the fair and generous policy not to take revenge on an individual coming from the more arrogant state will tend to shame the latter into an equally honorable course.

There is much to be said against the policy of longevity promotion and of licensure or any other privilege accorded simply to age and supposititious experience. Yet in this particular everyone knows that the kind of an examination fairly required of a man fresh from school can very rarely be passed by one who has been out of the school atmosphere for even a few years. What is forgotten of theoretic knowledge is more than compensated by practical acquisition, if the individual is of proper mental calibre. The business sacrifice of a change of location is such as to militate against itineracy except by out-and-out quacks. A man of good professional standing, once licensed, gradually eliminates from his practice certain groups of cases which he is theoretically competent to attend, but which for professional or economic reasons he finds it better to relegate to others. Even without essaying special practice in the special sense, he finds it necessary to concentrate

his attention upon certain parts of medical science and art, and to eliminate certain other parts.

It frequently happens that a man, called to higher planes of activity by reason of his growing reputation, is confronted at a time when he has all sorts of details to distract his attention, with the necessity of "brushing up" on various topics of no earthly use to him. Sometimes, by tacit understanding, he is relieved of this necessity, but such a course is open to the most obvious criticism. All things considered, it seems that not only fairness but the broadest utilitarian considerations demand that when a physician has once been licensed to practice, he should be relieved of any further technical obstacles, after the elapse of a reasonable period—say five years.

This matter has a still broader bearing upon the general welfare of our country. We are coming to recognize more and more plainly that our conception of the sovereignty of states and the limitation of the national government to such functions as are necessary to maintain the essential unity and solidarity of the United States, is not without its drawbacks. One need not be an imperialist to prophesy that unless the maintenance of state sovereignty is relieved of any serious tendency to hamper national progress, there must sometime be a complete change in our constitution. State sovereignty can be maintained only by a cordial and rational spirit to conform all state legislation to a general standard of usefulness and convenience, from the standpoint of the entire country. Every detail which emphasizes this spirit helps to establish a precedent of wide application. It is the duty of every legislator and of every executive to criticize every proposed law and every interpretation of a law already in existence from the standpoint of national welfare. Any legislation of essentially local nature should be viewed with the same suspicion as class legislation or the granting of a special privilege of any kind.

A SUCCESSFUL PROPAGANDA.

With the organization of the National Association for the Study and Prevention of Tuberculosis several years ago was laid the basis of a sane and consistent movement against this disease in the United States. This body has now invited the International Anti-tuberculosis Association, which has its headquarters in Berlin, to meet in Washington in the coming fall; and a campaign has been very broadly conceived—so broad in its scope, indeed, as to be inclusive of all modern civilization. Thus far, twenty-nine among our own States have, through their governors, made plans for representation. Great Britain—including her more important provinces and colonies—will send her eminent men, as will also every other great continental country and many minor ones, as Bulgaria and Greece, and States adjacent to them. At least ten South

American Governments will send representatives, as will also Cuba, Hawaii and Japan. Of the momentous things which will be done there is now general information; and the Secretary-General of the Congress, Dr. John S. Fulton, at No. 714 Colorado Building, in Washington, is prepared to give detailed information. From France we shall hope to see and to hear Former President Loubet, Roux, Calmette, Letulle and Landouzy; Pannwitz, von Leyden and Orth from Germany; Von Printzkold from Sweden; V. Schrotter and Weichselbaum from Austria; Guiteras, Agramonte and Finlay from Havana; Phillips, of Edinburgh, who founded the first dispensary for consumptives; Turban, of Davos-Platz; von Behring and Kitasato.

The medical and surgical aspects of the Congress will receive due prominence; nevertheless the parts which other must play will be emphasized. It will be made known that tuberculosis is not only a doctor's concern; that it is indeed a matter which should, in the most vital way, interest everyone, whatsoever his calling or business. There is hardly any phase of existence which this pathological entity does not permeate. And there would be but little achievement were no one but the physician to take an interest in it. The fight against tuberculosis is one in which medical science shows the way, and directs what must be done; but to win the fight men in all walks of life—the statesman, the humanitarian, the sanitarian, the builder, the engineer the teacher—must contribute their zealous work and join their forces:

The status of the anti-tuberculosis propaganda is indeed most encouraging, as many data show beyond peradventure. The death-rate from this disease in New York City, for instance, has decreased fifty per cent during the last score of years. With regard to England and Wales, the medical department of the English Local Government Board reports that in those countries the consumption mortality in 1885 had shrunk to about one-half of its mortality in 1838. And Dr. T. Bulstrode, who has done such superb work against the disease in England, observes that as the mortality from it in 1906 about equalled the decrease observed in the preceding three decades, it would follow that the consumption should disappear entirely during the coming thirty years, were the decrease in the number of deaths to continue at the same rate. Of course no such continuance can be assumed; nevertheless these and many other data to the same effect should encourage the earnest worker in the sanguine hope that tuberculosis in a few years shall have to leave its place as the first among death-dealing agencies; and that the generation to follow us will see it very far down on the list.

Daniel Bennett St. John Roosa, M.A., M.D., LL.D., died suddenly of heart disease in this city March 8th, in his seventieth year, after a most active and useful life spent in the profession.

He was one of the founders and the only president of the New York Post-Graduate Medical School and Hospital, which will this year celebrate its twenty-fifth anniversary, and this great and worthy institution will always be looked upon as a monument to Dr. Roosa. He was the able editor of the *Post-Graduate*, the monthly publication of this school.

He was also one of the founders and surgeons of the Manhattan Eye and Ear Hospital.

Dr. Roosa has been president of many societies, including the Academy of Medicine.

He was a voluminous and classical writer in his specialty, many original and translated volumes bearing his name.

Dr. Roosa was one of the most active promoters of the "new code" idea some years ago, the result of which is the present status of the profession in respect to the code.

He was a man of great force and of positive ideas, as well as of strong friendships.

His memory will be revered by a host of warm friends.

CORRESPONDENCE

"CAPITAL PUNISHMENT OF THE MENTALLY DEFECTIVE MURDERERS."

To the Editor of the New York Medical Times:

I want to express as briefly as may be my appreciation of the very timely, lucid, and judicious editorial in the current number of the *MEDICAL TIMES* on "Capital Punishment of the Mentally Defective Murderers."

It is a subject greatly muddled in the public mind, caused by ignorance of the constitution of brain and mind largely, but in part probably by partisan experts, so-called, in their testimony on the witness stand. The occasion calls for a more intimate knowledge on the part of neurologists and the judiciary of mental science, by which I mean a knowledge of the faculties and propensities of the brain and mind, in health and disease.

The editorial to which I refer generalizes very well indeed the varieties of motives that lead sane men, the mentally defective, and the homicidal subject to commit murder—that is, to kill their fellow men with premeditated intent. The homicidal subject is seldom ignorant of the nature of his act. He is seized with an impulse to kill his victim for some grievance fancied or real, and often deliberately yields to it, as in the Thaw case. He knows what he has done and what he wishes to do, and often, like Thaw, glories in it. It is splitting hairs in such a case to pronounce the man innocent of murder, on grounds of insanity. At the outset, Thaw protested that the plea of insanity should not be made in his case. Be that as it may, few people, I think, however humane, would object to the death penalty in this and allied cases, if it were to be inflicted in a humane way, that is to say, by a painless method. The homicide subject is of no use to himself, and of no use to society, or the world. He is the unfortunate victim of generative and social conditions he had no hand in making, and is justly entitled, therefore, to merciful consideration, not to be forgiven or acquitted of a charge that is perfectly true, by any means, but mercifully put out of the way by means the most humane.

It is a judicial farce to arraign and try before an unscientific jury a self evident homicide on the charge of murder, where the subject has manifestly a morbid propensity to kill. Let him rather be turned over to the judgment of a commission not of lunacy but of learned and unbiassed neurologists, for it to decide

what use to put him to, or what fate to subject him to, in the interest of the public and his own.

DAVID ALLYN GORTON.

174 Montague street, Brooklyn, March 5, 1908.

PHYSIOLOGIC THERAPEUTICS.

To the Editor of the MEDICAL TIMES:

Correspondence resulting from my article on tuberculosis renders necessary some further remarks by the writer. I do not wish to be charged with attempting to exploit secret methods of treatment or of withholding from my colleagues any information that they need. I know of no physician living or dead who has done so much missionary work with his pen and so fully described approved methods of physiologic therapeutics, as the undersigned, and when letters complain that in the tuberculosis article published in your February issue the author "neglects to enumerate" the physiologic agents, and "fails to state his methods of treating tuberculosis," I begin to wonder what the profession expects.

Personal replies to these letters are impossible, but if you will kindly present these remarks as a supplement to my previous contribution they may enlighten some of your readers who want to know.

The limits of a journal article on a single phase of the tuberculosis question do not permit a writer to include also an additional dozen pages which the most condensed summary of information such as enquirers ask for would require. It is assumed that other phases of the subject, especially a subject so complex and large, will be considered by physicians in other literature—and plenty of it exists.

As to the actions and technics of the great physiologic agents, those who wish to study them will find ample sources of knowledge, though not in one up-to-date complete text-book. A medical bookseller can trace authors and publishers for customers who wish to buy. One "System of Physiologic Therapeutics," published within a few years, embraced eleven volumes, if I remember rightly. At least half a dozen physicians have written separate books on some part of the work of these agents. I myself have performed the drudgery of giving my colleagues such information as a pen could supply in six different books, aggregating over 3,600 octavo pages, and in addition have contributed to "Correspondence Instruction," and written about twenty articles for medical journals. This is enough for one toiler to do in the face of the bitter antagonism that has resisted the general recognition of the value of these remedies.

But I have done more: I undertook to give the profession an adequate school of clinical instruction and continued my efforts for six years, with no personal profit and with an income from teaching that was less than the expenses.

Moreover, I endeavored to fill a "long felt want" by collecting all the articles on physiologic agents published each year in all the medical journals in the English language, and publishing the carefully edited original text in one large illustrated quarterly, each number printing about 130,000 words.

This missionary work seemed to accomplish little in teaching the profession how to appreciate the help of

physical agencies in medicine and how to use them to the best advantage. It was therefore stopped with considerable loss.

But during the three years in which this editorial duty compelled me to read every contribution of the hundred or more published each twelve months, it was fully demonstrated that if physicians want information respecting this branch of practice they can obtain it by looking for it. The quantity published is respectably large.

In an article entitled "The Present Status of Physiological Therapy in Medical and Surgical Practice," which will probably appear in the current issue of the *Buffalo Medical Journal*,* I have set forth the definite fundamental principles of employing these agents and any physician who applies these correct principles to technics can work out his own success in securing results. As my most important text-books were published between 1897 and 1902 they unfortunately do not contain the results of later experience and the ripest conclusions of time and continuous investigation and study. Some of them are out of print. But they were helpful in their day and much of the basic fact of research cannot get "old." But I only refer to them here to show that I am not open to any charge of withholding knowledge of my methods of treatment.

As to the "treatment" of tuberculosis there is but one thing to say. When the physician has mastered the principles and uses of the physical agents in their application to disease he will have no further question to ask in regard to the treatment of any one disease. When he can make a diagnosis as to the therapeutic actions required—indicated—to combat the morbid conditions in the tissues, and has mastered the practical principles of how to set up such actions at will in the tissues of patients needing them, he will know all there is to know about "treating" bronchitis, Bright's disease, rheumatism, diabetes, hay fever, tuberculosis, or any other nosological name in the directory of diseases. He will understand that *actions* and not *methods* constitute the prescription, and that pathological states and not names are the basic object of attack. When medical colleges include correct teachings on physiologic therapy in their undergraduate courses, and when the rabid prejudice of a large part of the profession against these agents gives place to open-minded common sense, it will no longer be necessary to defend and explain the most rudimentary statements about their work.

S. H. MONELL, M.D.

New York City, February 22, 1908.

In Praise of Sugar.—This product is so bountiful that it seems patent to *The Lancet* it is designed for human consumption. It is one of the most powerful foods, as well as one of the cheapest. In muscular labor no food appears to give the same powers of endurance as sugar. The hard physical worker, the athlete, or the soldier on the march is much more equal to the physical strain put upon him when sugar has been liberally supplied than when it is denied him. Trophies, prizes and cups have undoubtedly been won on a diet in which sugar was intentionally a notable constituent. "It has even been said that sugar may decide a battle and that jam, after all, is something more than a mere sweetmeat to the soldier." Sugar

is a powerful muscle food. This probably accounts for the disfavor into which it falls; for a comparatively small quantity amounts to an excess, and excess is always inimical to the easy working of the digestive processes. A strong solution of sugar irritates the tissues, may set up a superficial inflammation—even an eczema. The gastric mucous membrane is irritated and the inordinate production of mucus and of a highly acid gastric juice is encouraged. Much sugar spoils the appetite. Children overindulged between meals have their dinners spoiled for them. An overindulgence in sweet liquors, sweet ices, and in "crystallized" fruits after dinner retards the digestion of the meal. Sugar being a concentrated food, satiates. But taken in small quantities and distributed over the daily food intake it contributes most usefully in health to the supply of energy required by the body. In certain diseases it is of course undesirable. However, "the man who practically abstains from sugar or reduces his diet to one almost free from carbohydrates in favor of protein food, often shows feeble muscular energy and an indifferent capacity for physical endurance."

The Cerebrum in Lead Poisoning.—Warner (*Lancet*, July 13, '07) describes the case of a woman who received from a friend diachylon pills with the advice to use six of them every day for several days. She followed this advice when, after severe exercise, she suffered great pain in the back and abdomen, had a uterine hemorrhage and miscarried. Having recovered from her miscarriage in hospital she suffered from marked anemia, pain in the back and limbs, with colicky pains and a fine tremor of the hands. The speech was defective and the memory deficient; the mental symptoms were suggestive of delirium tremens. There was marked constipation and a black line nearly one-fourth of an inch thick on the gums at the base of the teeth. These symptoms persisted ten days before the mind became clear, and natural sleep took the place of that induced by drugs. Under active treatment the dark line on the gums rapidly diminished and ultimately recovery took place. The *Therapeutic Gazette* considers cases of acute and subacute poisoning from lead due to the use of diachylon plaster for the purpose of producing abortions, a method popular among the very poor in England. That lead plaster freely applied can produce such results is rapidly becoming common knowledge, and American practitioners should realize that certain symptoms due to this cause may mislead them if they are not on the lookout for them.

Enlarged cervical glands are not idiopathic, states F. T. Donoghue (*Bost. Med. and Sur. Jour.*). The source of infection, usually the mouth, can nearly always be demonstrated, and should be treated. They are not primarily tubercular and bear the slightest relation, if any, to general or pulmonary tuberculosis. They are due to mixed infection of pus-producing bacilli. They will quickly resolve if the source of the infection is removed before the glandular tissue becomes disorganized. In the latter event the gland should be poulticed until it is practically liquefied and should then be opened by a stab-puncture, evacuated and drained by a Briggs canula. Thorough and extensive dissection is necessary in late cases with large masses of partially calcified or broken down glandular tissue.

* Note.—Published in March issue. See also March number of the "Medical Standard."

diminutive caliber, arises from the ileocolic arches (i. e., the dorsal ileocecal artery). The appendicular arteries inosculate to form arcs. The 3 appendicular arteries emit 14 branches to the appendix.

The Appendicular Artery—a minimum artery—is significant as it nourishes the dangerous and treacherous atrophic appendix—dangerous because it kills and treacherous because its capricious course cannot be prognosed. The atrophying appendix is supplied by arteries of limited number (2) and caliber. The arteria appendicular primarily and in the majority of subjects originates directly from the right circumference of the ileocolic circle (i. e., from the ileocolic artery). The appendicular artery secondarily and in the minority of subjects originates directly from the "ileocolic arches" (i. e., from the arteria ileocecalis dorsalis et ventralis). The appendicular artery arises primarily from the "ileocolic circle" and secondarily from the "ileocolic arches." The average number of branches of the appendicular artery is 12. The appendicular artery originates $2\frac{1}{2}$ times as frequently from the dorsal ileocecalis as from the ventral ileocecalis. The general aetiology of perityphlitis is trauma of the psoas muscle producing perityphlitic peritoneal adhesions which by contraction compromise the appendicular vessel (especially in the meso-appendix) and flex the appendix checking drainage—ending in perforation. The average number of appendicular arteries for each individual is practically 2 (actually $1\frac{11}{12}$).

The "ileocolic circle" partitioned by vessels, originates the main appendicular artery and presents on its distal a series of minor vascular arches.

The "*Ileocolic Circle*," is formed by the bifurcation of the jejunal artery or the trunk of the proximal mesenteric artery into the ileocolic and ileal arteries and completed by their distal anastomosis. The ileocolic circle is located in the ileocolic angle and is a constant structure. It may be accompanied by mesenteric apertures, from insufficient vascular nourishment, which may serve for the hernial strangulation. The ileocolic circle is frequently divided into compartments by arteries of varied dimension which are destined to nourish the mesentery within the circle or are bifurcated loops, branches, of the main circle. The clinical significance of the "ileocolic circle" is that its right circumference (i. e., the ileocolic artery) is the main source of the origin of the arteria appendicularis which alone will immortalize it.

The circle existing in the form of an oval measures frequently 2×6 inches. The dimension of the ileocolic circle depends upon the location of the bifurcation of the trunk of the proximal mesenteric artery (which is identical with the jejunal artery). The proximal mesenteric artery may bifurcate proximal, on a level or distal to the origin of the distal mesenteric artery. The ileocolic circle may possess, imposed on its periphery a series of minor vascular arches (see figure 58). The "ileocolic circle" is a primordial vascular landmark destined to nourish the ileum and cecum (with the appendix as an ancient stomach). The "ileocolic circle" is associated and in relation with the right psoas, distal ileum, cecum, ureter, common iliac and the treacherous, dangerous appendix to which it primarily, chiefly and directly emits the vascular supply. It is directly associated with the "ileocolic arches."

The "ileocolic arches," six in number, are irregular in form, dimension and in caliber of anastomosing ves-

sels. The ileocolic arches originate the two appendicular arteries.

The "*ileocolic arches*" averaging six in number for each individual are formed by the combined anastomosis of the arteria ileocecalis dorsalis et ventralis. The "ileocolic arches" are a primordial vascular landmark of the cecum (and atrophying appendix). They resemble the mesosigmoid arches or other arches located in the flexures of the tractus intestinalis. At each colic flexure (ileocolic, hepatic, splenic, sigmoid) there may be an accumulation, a condensation of vascular arches. The ileocolic arches are located in the ileocolic angle. The clinical significance of the ileocolic arches is included in their relation to surgical procedures of the cecum and appendix. They may be clamped or ligated without molesting the "ileocolic circle." The ileocolic arches are mainly associated with the appendicular blood supply, secondarily and directly originating one or more appendicular arteries. Practically the "ileocolic arches"—though connected by anastomosis with the colic and ileal arteries appear as quite independent, isolated structures, destined for the cecum. They are not, however, end arteries or loops as the tractus intestinalis may be injected through the "ileocolic arches."

"*Straight terminal vessel of the intestine*" or "*vas intestini terminale rectum*" extending from the mesenteric or mesocolic arch to the border of the enteron or colon, is of ample length ($\frac{1}{2}$ to 2 inches) to be clamped or ligated without compromising the mesenteric or mesocolic arch and thus avoiding the intestine to the jeopardy of ulceration or gangrene.

The "straight terminal vessel" is of practical importance in intestinal surgery. In the mesenteron there are perhaps six "straight terminal vessels" to the inch. In the mesocolon there are perhaps four "straight terminal vessels" to the inch. The mesocolic "straight terminal vessel" is of two kinds, viz.: (a) the "long straight terminal vessel" which supplies the colon and an appendix epiploicus; (b) the "short straight, terminal vessel" which supplies the colon only. A mesocolic arch may lie in contact with the colon (internal or ventral surface), however, the "straight terminal vessel" exists and blunt dissection will expose ample length (one to two inches) for clamping and ligating.

The ileal artery is a continuation of the jejunal artery from the point of emergence of the ileocolic. The rami ilei with their meso-ileac arches are presented in this illustration. Some arches present duplicity.

The "*ileal artery*" extends from the distal end of the jejunal artery or from the bifurcation of the trunk of the proximal mesenteric artery to its distal anastomosis, with its opposite fellow, the ileocolic artery. The ileal artery forms the left circumference and the ileocolic artery forms the right circumference of the "ileocolic circle." The ileal artery emits branches to nourish the ileum of such limited caliber (as compared with the jejunal) with consequent limited blood volume, especially at the distal ileum, that it is subject to ulceration and perforation (in typhoid fever and tuberculosis). Blood volume cures and is a prophylactic against disease. Hence, the jejunal with maximum arteries and consequent maximum blood volume is not only the chief digestive segment of the tractus intestinalis but is rarely subject to disease (ulceration or perforation).

The "concentric gastric circles" are reflexed proximalward. The stomach lies between the concentric gastric circles.

The "concentric gastric circles." There is a proximal and a distal gastric circle:

(a) Proximal gastric circle or gastrohepatic circle, the lesser of the two "concentric gastric circles" is

greater of the two "concentric gastric circles" lying along the greater gastric curvature is formed by the anastomosis of the gastro-epiploica (sinistra and dextra) and completed by the hepatic and splenic arteries. The distal gastric circle may measure 20 inches in circumference.

The gastrum practically lies between the two "con-

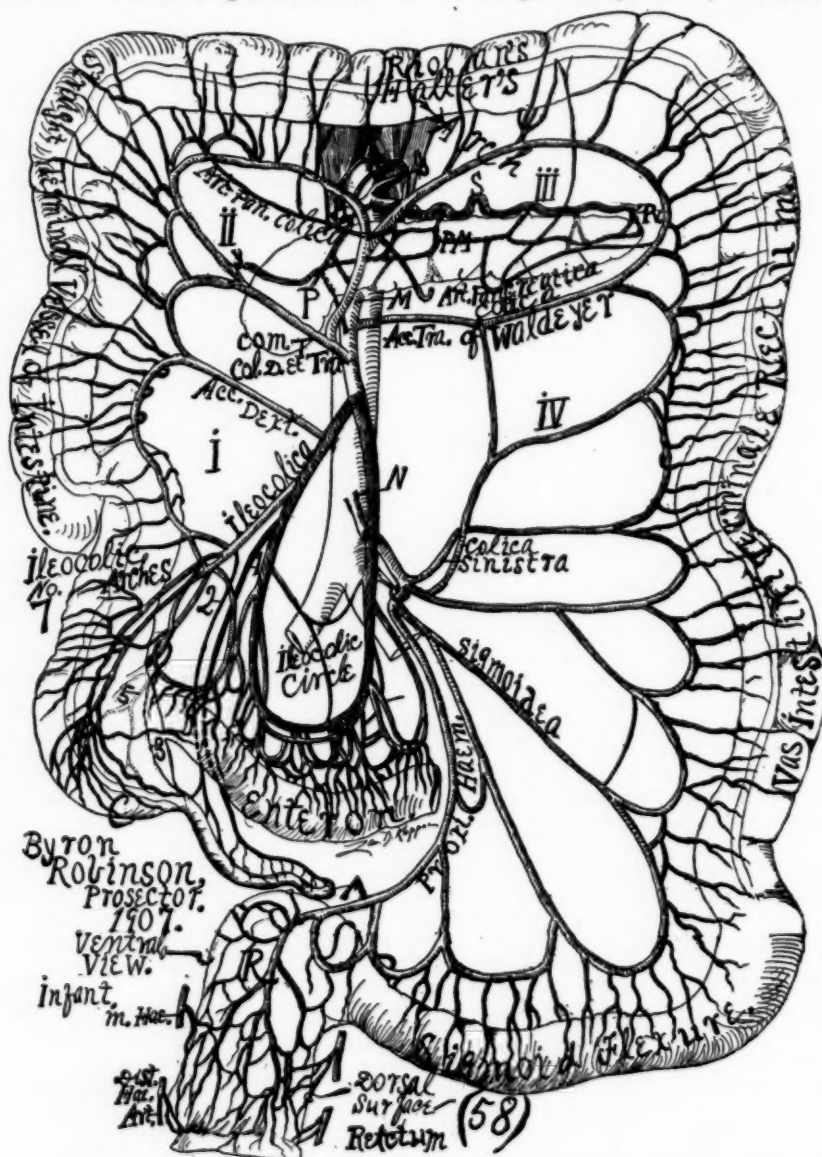


FIG. (58). From same subject as Fig. (57). Both drawings are from my personal directions. Illustration explained in the text.

formed by the anastomosis of the gastric and hepatic arteries, and a circle is completed by the arteria hepatica communis (common trunk of the hepatic and gastro-duodenal arteries). The circle is located along the lesser curvature. The proximal gastric circle may measure ten inches in circumference.

(b) Distal gastric circle or hepatosplenic circle, the

centric gastric circles" and in gastrectomy a ligature is required at the right and left end of the gastric and gastro-epiploic arteries.

The arrangement of the blood apparatus of the stomach resembles that of the enteron and the colon. It consists of: (1), a trunk (celiac axis); (2), a branch or arch (the proximal or distal gastric arteries—arteria

gastrica and arteria epiploica); (3), "straight terminal vessel" (rami gastrici).

The Riolan-Haller arch is interrupted by a Waldeyer artery, enhancing the integrity of the peripheral colonic circulation. Multiplex arches increase and fortify circulation in the periphery.

The *Riolan-Haller Arch* or arcus transversus colicus is formed by the inosculature of the arteria transversa colica accessoria—Waldeyer's artery—of the proximal mesenteric artery, and the proximal branch of the arteria colica sinistra—of the distal mesenteric artery. The Riolan-Haller arch is frequently to its advantage interrupted by an accessory colic artery, or what I have termed Waldeyer's artery. It is of extreme practical significance in surgical procedures on the intestines that the Riolan-Haller arch be not ligated or interrupted, as it may jeopardize the colon to ulceration or gangrene. The Riolan-Haller arch may possess on its periphery or be imposed on its circumference by a series of minor arches. Waldeyer's artery makes more solidly and compactly the circulation of the transverse colon (18 inches) Riolan-Haller arch endangers peripheral circulation. Multiple vascular arches insure ample peripheral circulation by collateral anastomosis.

The arterial fields I and IV are renal, II and III are arterial fields of the transverse mesocolon, circumscribe the duodenum and pancreas. The arterial fields (I and II), (III and IV) are bilateral (proximal and distal) and practically constant, however, varying in dimension and location.

Arterial Fields (areae arteriae) produced by the arches and circles of the proximal and distal mesenteric artery are located mainly on the dorsal abdominal wall. The arterial fields circumscribe or bound viscera bilaterally and may be designated as proximal and distal, bilateral, dorsal, abdominal, arterial fields. The centers of the arterial fields may be depressed, while the circumference may be prominently elevated by the projecting arterial arch constituting a kind of mesangium. The renal, arterial field is one of chief practical importance. The mobility of the arterial fields of the transverse mesocolon endows it with little practical importance during peritonotomy. The circumscribing arterial field of the proximal and distal mesenteric arteries may during peritonotomy aid the surgeon in the location of viscera and so avoid severing the jejunal artery from the facility of palpation (see Fig. 58).

"*Jejunal Artery*" (*truncus mesentericus arteriosus proximal*) or trunk of the proximal mesenteric artery averages 3 inches in length. The jejunal artery extends from its origin on the ventral surface of the aorta to its bifurcation in the arteria colica and arteria ilei. The trunk of the proximal mesenteric artery is identical with the jejunal artery and might well be named as such. The mark of division between the jejunal artery and the ileal artery is the origin of the ileocolic artery. The trunk of the proximal mesenteric artery or jejunal artery emits transversely some half dozen powerful arteries to supply the jejunum transmitting sufficient blood volume to maximize digestion and minimize jejunal disease (e. g., tuberculosis and typhoid fever). Ample blood is a prophylactic and cure for disease. The trunk of the proximal mesenteric artery presents from its peculiar arrangement with the duodenum a most significant clinical feature from the fact that dur-

ing the progress of splanchnoptosis, the jejunal artery or the trunk of the proximal mesenteric artery clamps the transverse duodenum firmer and firmer, ending in gastro-duodenal dilatation.

Fig. 57. *General Remarks.* The anastomotic apparatus between the celiac axis and the jejunal artery or proximal mesenteric artery is evident. I term it: arcus duodenalis and arcus pancreaticus. There is a tendency in the mesenteric arches toward duplicity. In general the mesenteric arches appear as a major series of arches with a multiple series of minor vascular arches imposed on their periphery.

General Remarks. Fig. 58 presents in general, a series of major mesocolic arches, however, with an extremely limited number of minor vascular arches imposed on their periphery. The four colonic flexures (ileocolic, hepatic, splenic, sigmoid) present accumulations of vascular arches. The trunk of the distal mesenteric artery trifurcates (30 per cent. of subjects). The arteria pancreatica colica is duplicate. The pancreato-colic artery I have noted in no textbook. The multiple major arches of this colon insure peripheral circulation. Of the bilateral proximal and distal major mesocolic circles or arterial fields (the right renal arterial field is perhaps the most constant). Practically the right distal major mesocolic circle is constant. It varies extremely in form and dimension, but exists in each subject. It varies considerable in location. It may be subject to one or more partitions by cross arteries. The right, distal, major mesocolic circle (1) is practically as constant as the "ileocolic circle," but the ileocolic circle is a primordial, developmental, vascular landmark—the vascular landmark between enteron and colon. (Fig. 57 and 58 are illustrations from the same subject.)

Inner Genital Tuberculosis in Early Childhood.—Hohlfeld (*Zentralbl. f. Gyn.*, No. 23, '97) examined two children post-mortem. The first, aged three, had its father and a brother die of tuberculous disease. She had been taken into hospital seven months before death suffering from vomiting, tuberculous peritonitis and enteritis were correctly diagnosed. Autopsy showed advanced tuberculous disease of the cervical, bronchial, mediastinal and mesenteric glands, and a few foci in the liver and in one lung. The intestines and peritoneum were much involved. The Fallopian tubes were thickened and bore prominent yellow swellings; miliary tubercles were found not only in one ovary, but also in the uterine muscularis and mucosa. The second autopsy was on a child of nineteen months, an only child of a father said to be delicate and of a mother who died in the puerperium. The child had itself undergone a successful operation for tuberculous disease of the fingers and metacarpus, dying, after recovery from an attack of double pneumonia. Necropsy showed miliary tuberculosis of the spleen, liver and peritoneum, a caseous bronchial gland and a tuberculous ulcer of the colon eight inches below the ileo-caecal valve. The uterus, as in the first case, was distinctly involved in the general disease, the endometrium, in a state of caseation, breaking down into the uterine cavity. The right ovary was converted into a tuberculous mass the size of a hazel-nut.

RETROSPECTIVE

Serofibrinous Pleurisy in Infants.—J. Brudzinski (*Archiv. de Medic. des Enfants*, Sept. '07) considers the new physical sign, the "Signe du Sou," which is elicited by placing a sou over the suspected part of the thorax and tapping it gently with another, while the corresponding level on the opposite side is auscultated; the sound is appreciated as if it were conducted through the thorax. If, for instance, we suspect a pleurisy at the right apex anteriorly we percuss over the coin in this region and we auscultate over the right apex behind. In examining axillary conditions we auscultate on the same side of the chest and at the same level, but close to the vertebral column, so as to bring as great a thickness of lung as is possible between the points of percussion and auscultation. We should compare the notes obtained at different levels. In the case of the normal lung the note is dull and entirely devoid of all metallic tinkle; but an effusion produces a distinct metallic tinkle; and if there is much fluid this note is silvery in character. Pulmonary consolidation, on the other hand, elicits even greater dullness than the normal lung. Brudzinski considers this sign (in children at least) as pathognomic of pleural effusion and even more certain than exploratory puncture. Though the latter will differentiate between serous and purulent effusion, it may nevertheless miss an encysted pleurisy. By means of this sign Brudzinski has in many instances detected axillary pleuritic effusion; and has verified his diagnoses by exploratory puncture. He has not found, as is generally held, that purulent effusions are more common than serous. We are advised to close one auditory canal with the finger while listening with the other. We are a little puzzled how one should proceed. To place a coin at one spot, to tap this coin with another, and to close one ear while the other is listening; to do all these things together would require acrobatic endowments such as most physicians do not possess.

Rheumatic carditis is essentially a carditis, states C. Coombs (*Bristol Med.-Chir. Jour.*, Sept., '07), who has, in four autopsies found the endocardium and myocardium inflamed; in three of these the pericardium was also inflamed. Rheumatic infection is blood-borne; and it attacks the heart precisely as any other organ, through its nutritional blood supply, in this instance the coronary arteries. The gravity of rheumatic carditis in the earliest or "childhood stage" lies mainly in the damage done to the myocardium; like all rheumatic lesions it is remarkably apt to recur or rather "to recrudescere." The infective agent lies quietly in the cardiac tissues, awaiting the occasion to reassert itself; possibly it is stored elsewhere in the body and issues thence at intervals to infect the heart again. Clinical experience confirms this view of regarding rheumatic heart disease as a carditis principally important in childhood by reason of the muscular lesions. The signs are outward displacement of the apex beat, widened area of impulse, abnormally ready perception of the peristaltic nature of the systole, increased transverse dullness on both sides, the murmur of mitral incompetence and the indications of raised pulmonary tension (shown by great accentuation of the pulmonary second sound

which is also oftentimes doubled); these signs are all due to a dilatation of both ventricles. The relation of the rheumatic infection may, as regards both the endo and the peri-cardium be divided into three stages—the acute, the recurrent and the cicatricial. In children it is unnecessary to blame the valves or the pericardium for the signs elicited; the myocardial changes suffice to account for everything.

Rachitis.—Thomas and Furrer (*Cleveland Med. Jour.*, Dec., '07) have reviewed one hundred cases. They have found that forty per cent. of the infants and children of the hospital class between the ages of six months and two years are rachitic. The rosary, enlarged epiphyses of the wrist, prominent parietal and frontal eminences and delayed dentition are the four most constant symptoms. Eighty per cent. of these cases of rickets are slight or moderately advanced and are therefore likely to be overlooked. Uncomplicated rachitis is a self-limited disease tending toward gradual recovery. Serious osteal deformities may, however, occur in untreated cases, the sternum, ribs, spine, the long bones of the extremities and the pelvis are most frequently affected. Bronchitis, bronchopneumonia, pertussis and gastro-intestinal disturbances, which are so common during the first two years and which are not ordinarily considered very serious in the normally developed healthy child, become important factors in causing the high mortality rates in infancy and early childhood, when they become engrafted upon constitutions already weakened by the malnutrition of rickets. Rickets may be diagnosed by inspection and palpation. The treatment is almost wholly along dietetic and hygienic lines. We should withdraw all proprietary and other irrational foods and substitute clean milk (properly modified), fresh air and sunshine, bodily cleanliness, cod liver oil and other fats and phosphorus. A routine prescription would be: \mathcal{R} Elixir phosphori, 5v, ol. morrh. ad \mathfrak{z} ii. Sig. 5ss tid. pc.

Oesophageal Stricture from Lye-Cauterization.—Bass (*Wiener Klin. Wochenschr.* No. II., '07) believes that the dilatation of fresh strictures should begin as soon as possible after the acute symptoms have subsided—in mild cases as early as the beginning of the third week. Soft bougies filled with lead wire should be used; and the treatment should be kept up as long as possible. Strictures, especially severe ones, which are observed later will have to be treated according to the state of nutrition of the patient. In half starved patients, or where even fluid foods cannot be swallowed, prompt gastrostomy is essential to a rapid improvement of nutrition. After strength has been restored "endless catheterization" is instituted through the gastrostomy fistula, which should not be allowed to close until the undisturbed permeability of the oesophagus has been definitely secured. In strictures not readily catheterized, but which permit the passage of fluids, and where the nutrition is relatively good, thiosinamin injections (about half a syringe of a 15 per cent solution several times weekly) may be tried. This treatment failing, gastrostomy and permanent catheterization are indicated. The thiosinamin injections are contraindicated where there are fresh operation scars, as in tuberculous individuals, since they may not only soften recent cicatricial tissue but may also stir up an old inflammatory focus. Hence

a careful examination of the whole organism must be antecedent to thiosinamin treatment. Catheterization for the prevention of stricture in recent cases (of three or four weeks' duration) is done to begin with every day; then at intervals of two, three to seven days for half an hour longer.

The Throat Affection in Cerebro-Spinal Meningitis.

Westerhoeffer believes, states the *Brit. Jour. Chil. Dis.* (Oct., '07) that the tonsillar affection is the primary one in this disease. This lesion might easily escape observation, as the inflammation is often situated in the upper part, behind the velum palati and not on the tonsils themselves. The throat should be examined in all suspicious cases. Pneumococcal and streptococcal meningitis originate in the nares, but not the meningococcal or the tubercular forms of the disease. All attempts to eliminate the disease by means of gargles and nasal douches have proved unsuccessful, nor is removal of the tonsils followed by good results. A large bleeding surface in the latter operation only makes more room for the organisms to enter. In a case cited the throat affection was present during the first days of the disease only, as an intense redness and cedematous swelling, and disappeared very quickly. The germs entered, so Westenhoeffer believes, with the respired air and settled on the first suitable spot, the infection being spread by the expectorant material. Though in 90 per cent. of these cases the disease occurs in children, they do not generally spread the disease, because they do not expectorate. The source of infection is the sputum of infected adults. In all cases the meningococcus can be found in the nasopharynx. Lumbar puncture, at best, only mitigates the symptoms. Meningococcus serum has been recommended in the acute stage, either subcutaneously or by the rectum or by the spinal column; the last method of procedure is most likely to bring about good results. In the second stage of the disease cerebral surgery is preferable to injections of serum; by trephining in two places the descending cornu can be drained.

Picric Acid in Burns.—Kindleberger, in the *Military Surgeon*, reports 52 cases of burns which were consequent upon a boiler explosion on the U. S. S. Bennington. The clothes were removed, the dirt and grease were washed off with tincture of green soap and ether, and the sloughs and dead skin cut away. Wounds which had already been dressed with some oily preparation were gently wiped with some sterile cotton, and all oozing surfaces were dried in the same manner. Sterile gauze soaked in a 1 per cent. solution of picric acid was then applied to the burnt surface and covered with paraffin paper, cotton pad and gauze bandage. If the face was burnt it was entirely covered with a gauze mask soaked in the solution. The dressings were changed daily. Those cases which had been previously treated with oils and ointments, and which were admitted with burnt surfaces bathed in pus, and suffering from high fever improved rapidly under Kindleberger's method, which gave pain for ten or fifteen minutes after the application, but later on had an anaesthetic effect, the pain being less each succeeding time the wounds were dressed. Picric acid solution, observes the *Therapeutic Gazette*, stains the skin; surgeons and nurses should, therefore, use rubber gloves in applying it. Probably the solution, by coagulating albumen, aids materially in stopping oozing and pus formation, and

also in preventing the absorption of toxic material. After the first few days' dressing it may be applied every other day or every third day. After the gauze is removed the burnt part should be irrigated with picric acid solution, and if the gauze adheres it may be softened with the solution before it is taken away, so that the new granulations will not be torn. Where fingers or toes are burnt layers of picric acid gauze should be placed between the parts to prevent adhesion. In every case in which this treatment was applied by Kindleberger the urine was dark red and frothy, the condition being attributed to hemoglobinuria and some carboluria. Frequent urinary analysis showed no albumen; and the discoloration was considered of no consequence. Patients with such urine and high fever at night were given small doses of magnesium sulphate for its antidotal and purgative effects. Braisted, in his report on the "Japanese Naval Medical and Sanitary Features of the Russo-Japanese War," states that many extensive burns were treated among the Japanese by means of a picric acid solution. Kindleberger concludes that picric acid should be used locally in all burns however extensive or severe, to get a clean wound, rapid healing, diminished fever and lessened scarring; he considers it as much a specific as antitoxin in diphtheria, mercury in syphilis and quinine in malaria.

Milk and the Public Health.—Surgeon-General Walter Wyman of the Public Health Service has submitted to the Secretary of the Treasury a report on this subject, which is the result of an investigation ordered by President Roosevelt and conducted by Federal experts. There are twenty-two treatises. It is observed that the general decrease in general mortality does not apply to the infants. Gastro-intestinal disease is the largest single factor in determining infant mortality. All available data showing the influence of milk as a carrier of infection and the measures necessary in consequence are presented. The most important disease of cows from the standpoint of public health is tuberculosis, which is, moreover, the most prevalent. All milk should come from either tuberculosis tested cattle or be subjected to pasteurization. The report contains an amazing amount of evidence of the responsibility of infected milk for epidemics of typhoid fever, scarlet fever and diphtheria. There are tabulated 500 epidemics that were definitely traced to the milk supplies, including 317 epidemics of typhoid fever, 125 of scarlet fever, 51 of diphtheria, and 7 of pseudo-diphtheria or epidemic sore throat.

Dyspeptic asthma, states Einhorn (*Diseases of the Stomach*) was first described by Henoch, who originally referred to its occurrence during acute digestive disturbances in children. Henoch's cases all ran their course with alarming symptoms. The dyspnoea was of a high degree and was attended with cyanosis and cold extremities; and there was no improvement under the ordinary stimulants, nor, indeed, until treatment was directed to the digestive disturbances. There are two main groups of cases of dyspeptic asthma: cases in which this asthma appears in an acute form, periodically, and in which a more chronic type is assumed. The former group is characterized by the occurrence of asthmatic attacks at more or less prolonged intervals, either without an apparently preceding cause, or after distinct excesses in eating, drinking, smoking, or after undue excitement; extreme dyspnoea, cyanosis, almost

collapse, are experienced. The second group—chronic dyspeptic asthma, embraces the larger number of cases. Either the attacks of asthma appear quite soon after meals, without any particular provocation, or after some slight exertion; or they occur two or three hours after meals, spontaneously or as before, after some such exertion as walking. Sometimes in the latter the attacks can be checked when the patient takes a small amount of food. Cases in which attacks of asthma appear soon after meals greatly resemble true angina pectoris (such as is so often encountered in coronary arteriosclerosis), the differentiation is oftentimes very difficult. Even in true angina there may, in the beginning, be no discoverable lesions of the heart or blood vessels. Such cases may for a long time seem to be dyspeptic asthma, until suddenly there are distinct signs of heart involvement (irregular pulse, albuminous urine, etc.). Dyspeptic asthma is as a rule amenable to treatment: a rational regime will often bring about a permanent cure. Einhorn has examined many cases of dyspeptic asthma with regard to the secretory condition of the stomach. A considerable number suffered from achylia gastrica; hyperchlorhydria was also often encountered. Treatment of these conditions resulted most favorably regarding the asthma. In both of these opposite conditions an undue irritation of the gastric mucosa no doubt took place. In hyperchlorhydria it is the hyperacid gastric juice; in achylia, the mechanically unchanged coarse particles of food which are irritating to the gastric mucosa and thus reflexly to the vagus fibers. In cases where the gastric secretion is normal we must assume (as did Boas) a gastric hyperaesthesia as the cause of the asthma. Floating liver is no infrequent in these cases, in which the abnormal position of that organ, dragging the diaphragm downward, causes the dyspeptic asthma. In treatment we must first relieve any existing disorders of the digestive tract. Then we must correct any abnormal position of the abdominal organs, especially the liver. A regular mode of life, avoidance of excess of alcohol or tobacco, and of mental strain or worry, are of importance. Thus will most cases be not only relieved, but radically cured.

Appetite.—J. S. Goodall declares (*Lancet*, Dec. 21, '07) that hunger originates in the tissues generally and not in the stomach in particular, for hunger may exist after the stomach has been excised, and normally in some animals when their stomachs are full of food. The sensation is simply referred to the stomach as the organ in which appetite is naturally appeased. Appetite is a desire or inclination for food, which in the newborn child, at any rate, is invariably begotten of hunger. The infant has no likes or dislikes about food, for it has no accumulated experience on the matter. We come into the world with only two complete sensations: the vague internal sensation, hunger, and the almost equally vague cutaneous sensation, touch. The special senses are chiefly of post-natal development: taste, smell, sight and hearing are perfected only after some considerable time. As the senses are developed the experiences of food are stored up, definite likes and dislikes for its varieties are formed, and the primitive hunger-appetite becomes modified by an important psychic factor, visual and olfactory not less than gustatory experience being concerned. There are four factors in the fully evolved appetite: the purely primary physiological—hunger; the purely psychological—anticipation; the psychophysio-

logical, in which distance receptors (the end organs of sight, smell and perhaps hearing) are stimulated and incite previously formed likes and dislikes; and, lastly, the physiologicopsychic factor due to the non-distance receptor, the end organs for taste being stimulated by the introduction of food into the mouth. The end of the appetite which has such complex foundations is to initiate and insure a secretion of suitable digestive juices and so secure good digestion. Goodall submits a summary of the physiology of the secretory processes connected with digestion, and emphasizes the advantage of appealing to the psycho-physiological factor in appetite in order to secure the greatest nutrient benefits of food. In feeding sick persons careful preparation of food is of especial importance.

Medicated soaps are of two kinds (*The Hospital*); those that are used merely as prophylactics, such as the various disinfecting soaps containing carbolic acid, sanitas, izal, etc.; and the really therapeutic soaps, which generally contain ten per cent. of some active ingredient. Notwithstanding some prejudice which still exists regarding soap therapy, this method of applying drugs to the skin is clean, convenient and very economical as compared with the use of ointments—and equally efficacious. The medicaments are bound to penetrate the skin to a certain extent; and this may be emphasized by covering the area with gutta-percha tissue. A superfatted ichthol soap generally improves acne and rosacea, while a balsam of Peru or a sulphur soap will—with other means—cure scabies. Tar soaps are advantageous in psoriasis or chronic eczemas. Whatever sort is used the affected areas may be simply washed with the soap, the lather may be allowed to dry in, there may be more or less vigorous rubbing and an impermeable covering may afterward be used.

Brain Surgery.—Surgeons should be more persistent in their efforts to diagnose and to cure intracranial disorders. C. A. Ballance (*Lancet*, Dec. 21, '07) sets forth six conditions calling for intervention in such cases: 1. Diseased and displaced bone, which should receive prompt attention. 2. Effused blood. Lumbar puncture will relieve intracranial pressure in apoplexy. Intradural hemorrhage and arachnoid hematocoele are conditions remediable by operation. Ballance has found with Cushing, that intradural hemorrhage in the newborn from pressure on the skull during delivery is curable by surgical procedure. Such extravasations are usually unilateral, are accompanied by bulging fontanelles, without pulsation, convulsions, unilateral palsy, irregular respiration, slow pulse, a stable pupil on the side of the hemorrhage, fever and inability to take nourishment; frequently death intervenes, or when the cases are not fatal, cerebral palsies, epilepsy and other nervous disorders. 3. Meningeal inflammations. Symptoms of meningitis serosa and fever, slow pulse, vomiting and drowsiness; lumbar puncture is advised. Hydrocephalus interna is difficult to treat successfully. Two procedures are recommended: intradural drainage, allowing the fluid to escape into the subdural space; and arresting secretion from the choroid flexus by ligating both internal carotids. In diffused suppurating meningitis the source of infection is suppressed, appropriate antitoxin is administered and free vent is made for the exudate. The operation provides free bilateral opening through which the pus may escape from the sub-

arachnoid space; in conjunction with this the spinal theca is opened, thus permitting irrigation from the cranial to the spinal cavity. In tubercular meningitis not only the subdural is opened, but also the subarachnoid, where the disease usually lies. 4. In brain abscess we should incise through the stem of mushroom-like formation of the abscess—the stem consisting of more or less resisting cortex, the body consisting of less resistant white matter. The fibrous walls of this stalk present a ready-made channel for drainage. This natural inflammatory channel is not likely to be obstructed by the flowing together of liquid cerebral substance, by which the efficiency of all forms of artificial drainage is impaired. 5. In epileptiform neuralgia of the fifth nerve Ballance severs the second and third divisions of the trigeminus. This operation is simple, without risk of hemorrhage, of opening the intradural space or of corneal anesthesia. The one objection is the late recurrence, due to reuniting of a few fine filaments, although the foramina ovale and rotundum are blocked with gold leaf. Recurrences are also reported by Abbe and Cushing, who fill foramina with rubber made soft by heating. For perfect closure of these foramina something more effectual than either rubber and gold leaf must be found. 6. We should operate when there are brain tumors which are localized and accessible. Brilliant results have followed some enucleations; even if the tumor be not found the decompressive operation oftentimes relieves agonizing headaches and distressing vomiting, and saves the sight. Increasing knowledge has led to greater precision in diagnosis, and to more scientific certainty and exactitude in operating.

Antipyretics, it appears to Woods Hutchinson (*Monthly Cyclop.*, Jan, '08), simply act like an increased dose of the toxin, by depressing the vital resistance and preventing the temperature reaction. Aconite veratrum viride and the whole group of coal tar products probably act in this way. When we give these drugs in pneumonia, typhoid or appendicitis we are but pouring a second poison into the body of the unfortunate patient to suppress the resistance which the organism is making to the first. Such drugs make the patient more comfortable, and the doctor much easier in his mind for the time being. Ultimately they lower the temperature, slow the pulse; in much the same fashion, however, as a blow on the head with a club would quiet the struggles of a man resisting arrest, or a dose of opium will relieve a soldier on the march.

Itching is the result of three categories of causes: external, idiopathic and constitutional. External causes are miscellaneous (mechanical toxic and climatic) and parasitic. Idiopathic causes are neurotic (including reflex and functional), and senile. The constitutional are divided into autotoxic (acute and chronic) and the dermato-pathologic. L. D. Bulkley (*J. A. M. A.*, July 27, '07) considers reflex itching induced by pruritus in other parts of the body and thus complicating itching from other causes (mechanical, parasitic, and the like). Dermatitis herpetiformis should be classed among the neurotic conditions, as being due to some derangement of the cord or the conducting nerves. Senile pruritus stands alone as a condition probably due to alterations in nerve structure in common with other degenerations belonging to old age. Urticaria is a type of autotoxic forms; most of the cases falling into the dermato-pathologic group

are included in the diseases eczema, erythema multiforme, lichen, dysidrosis and prurigo. Most cases called prurigo are really chronic urticarias. We should carefully seek in all cases the cause of pruritus, which is nature's signal that something is wrong, either with the skin or elsewhere. Pruritus is so often worse at night because there is then natural nerve exhaustion and consequently greater irritability. There is also greater loading of the blood at that time with the products of catabolism, the abeyance of the higher cerebral functions and external irritation, as from the cold in undressing followed by the warmth in bed, etc. The treatment of itching is difficult. Constitutional measures are essential, especially in neurotic cases. Analgesics internally are often serviceable; but they are likely to be misused. Opiates are worse than useless; and they aggravate the condition. Coal tar products should be used with great caution. Cannabis indica is valuable when judiciously used; chloral and the bromides may be combined together with a little aconite, and perhaps gelsemium. The hygienic treatment of the skin is important. However some patients are liable to overbathe. Woolen underclothing is generally best; restraint from scratching is very important. Locally carbolic acid is preeminently valuable when rightly employed.

Specific Reinfection.—J. Brew (*Med. Rec.*) describes a case seen by himself and treated at various times by two reputable colleagues, in which syphilis has evidently existed and been cured and in which a reinfection had occurred. Most syphilographers to-day agree as to the possibility of reinfection, though the phenomenon is rare. In Brew's case the patient had recovered and had remained fifteen years without any syphilitic manifestation. He was then treated for a hard chancre followed by a macular eruption and a sore throat. Marrying then, the offspring was syphilitic, although the mother showed no evidence of ever having been luetic. The symptoms in the second attack could not have been tertiary manifestations.

Primary Dysmenorrhœa.—M. Glasgow (*Med. Rec.*) finds that sedentary life, without exercise or fresh air may induce menstrual disturbance in city bred women, without any genital lesion. A menstrual fever may sometimes be caused by toxic substances absorbed into the circulation. Headache, nervous symptoms and pain precede or accompany the flow. There may be lowered vitality or deficient uterine strength and tone. Shop girls, especially, who have to stand all day suffer in this way. Prophylaxis should begin in childhood. Rest in bed at the menstrual period is unnecessary, but unusual exertion should be avoided. Wet feet and skirts should be warned against. Bowels must be kept regular. In the intermenstrual period hot douches, exercise, good food and tonics (hydrastis and nuxvomica) are advisable.

Vivisection.—The following illustrations of the fundamental importance of vivisection to mankind have recently been set forth: The saving of little children from death by diphtheria and from the idiocy of cretinism; the discovery of aseptic surgery; the proving of the germ origins of tuberculosis and typhoid fever, and, as a result, of methods of prevention; our knowledge of the infection of bubonic plague; the recently devised serum treatment of cerebro-spinal meningitis.

MISCELLANY

Prof. Koch, states *Science*, expects to visit the United States in the coming spring. He intends to rest for a year from his scientific labors, and for this reason he is declining all invitations to lecture in America.

Menstruation continued undisturbed, states Zacharias *Centralbl. f. Gynäk.*) several years after the removal from three patients of both ovaries for non-malignant affections. In each case he left a small piece of the ovarian tissue.

Sir Oliver Lodge has been an inveterate golfer for thirty years. He learned to play at St. Andrews, under Prof. Tait, who advised him: "You don't play golf with your muscles; you play with your morals." "But I hope," observed Sir Oliver, "no one will consider my morals as bad as my golf."

Prevention of X-ray Burns.—Von Jacksch has invented a shield, composed of a silver plate 0.02 M. M. in thickness, which is enveloped in a capsule covered by cellulose. This, placed over the parts to be exposed to the action of the X-rays, has been found to preserve the skin from injury; at the same time the rays seem to exert their influence unimpaired.

Von Esmarch died suddenly in Kiel. He served his country as a military surgeon in many campaigns; and most of his scientific researches were especially directed to military surgery in which branch he contributed many valuable papers. He is best known for the Esmarch band, which he first described at the congress of the German Surgical Society in 1873. In 1887 he was knighted, and in 1899 he received the title *Excellenz*, which is much prized in Germany.

A cat and dog hospital and dispensary have been established in the Cornell Medical School. These institutions for the treatment of the diseases and injuries of pet animals are absolutely free. The hospital has three floors; and there are reception rooms, isolation wards for contagious cases, a general ward, a kitchen, a bath-room, and a large, well lighted operating room, equipped with the latest devices in sterilizing apparatus and surgical instruments. Dr. Frederick Gwyer, Cornell professor of operative surgery, is at the head of the hospital staff.

Dr. B. P. Grenfell has been lecturing in London on the discoveries of papyrus found in the ruins of Oxyrynchus in Egypt. These relics were found in moulds of rubbish in very little worse condition than when they were thrown away twenty centuries ago. From these papyri we find that "the simple life" was preached and practised in Egypt at the time they were written. Riches, fame, and "the share of a hundred cities" were nothing; to Pindar, a poet rather popular in those days—and since, "a mere shrub of oak" was enough, for with it he had "no lot in trouble or strife."

Semper paratus is the motto which the physician should keep constantly pasted in his hat. *The Critic and Guide* well observes that we make but a sorry spectacle if, when suddenly confronted with a case of syncope, uterine hemorrhage, biliary or renal colic, we have not about us the necessary agents to give relief. One can write a prescription, but while it is being filled much valuable time is lost; when the emergency is at night an hour or two may be thus consumed. The experience of a colleague is instanced

who had been called to a distressing case of angina pectoris at night. He would "willingly have given a hundred dollars for a pearl of amyl nitrate at the time."

A midsea scattering of ashes was the novel ceremony witnessed recently by the passengers of a transatlantic liner. Mr. Robert Floyd, who had been a passenger agent of the Cunard Line, was a lover of the sea, and his favorite ship was the *Lucania*. Long before his death he expressed the wish that his body should be cremated and that his ashes might be mingled with the ocean he had so often crossed. The sea burial was timed to take place the same moment when memorial services for Mr. Floyd were held in New York city. The nurse, Mrs. Peterson, who had been worn out in attending him, threw the ashes into the sea from the urn in which they were taken aboard, and the captain gave her a certificate of the ceremony.

The first surgeon west of the Mississippi is stated to have been Dr. Antoine Francois Saugraine, who settled in St. Louis in 1800. His leisure was given to experiments in chemistry and electricity. The Indians frequently visited his laboratory and, not comprehending the mystery of his experiments, held him in great awe, and wanted to worship him as a god. He made the first lucifer matches in America, and the first thermometer used in the West. Besides being a physician, he was postmaster. His habit was to tie the mail up in a blue silk handkerchief and to leave it thus on his doorstep. The citizen would, in the doctor's absence, untie the bundle, look over the letters, select his own, and leave in payment as postage a piece of coon-skin—the legal tender of that period.

Beneficent Microbes was the subject of a recent lecture at the Sorbonne in Paris by Dr. Fernbach, member of the French Academy of Sciences. While many bacteria are disease-engendering, the vast majority are useful and salutary. They play an enormous role in industrial life, in bringing about the decomposition of organic matter certain germs liberate material of the utmost value for human kind. They favor fermentations. They play an important part in the development of wines, in the making of bread, butter, cheese, and many other foods. "The civic virtues of the microbe are proved by the part he plays in purifying the tons of material passed daily through the sewers of Paris." Mankind is only beginning to learn how to direct the forces of this unseen but beneficent auxiliary to his own greater welfare.

A revival of boxing is on in St. Bartholomew's Hospital, states the *Daily (English) Telegraph*. A boxing society has grown out of the desire for exercise, and a petition was set before the Treasurer and Almoners for the use of the old surgery (which was thrown out of service by the opening of the new buildings) as a boxing saloon. It is well observed that in hospital life it is always a problem amongst residents and students, whose work keeps them for many hours daily in the wards, how to get exercise. This cannot be had by way of out-door sports (though tennis is much in vogue in our American hospitals). Some form of exercise is certainly essential for internes lest they become "hospitalized"—the term given to an indefinite condition of ill-health and predisposition to disease which is consequent upon incessant work in the hospital atmosphere.

THE WILL AND DISEASE.

BY JOHN B. HUBER, A.M., M.D.,

Visiting Physician to St. Joseph's Home for Consumptives, Etc.

IN the two papers which I contributed to these columns in the issues of March and April I discussed environment and heredity, as related to disease. And I intimated that these agencies, together with the will, determine the weal or woe of the individual in this life. The poet of antiquity spoke of the three fates which disposed of human destinies; science to-day recognizes as well three fates, which it designates as heredity, environment and will.

It is a commonplace of experience that these three agencies are almost never distinctive in their influence; we know them to be essentially complementary and inter-related. They constantly dovetail into one another. A bad heredity (except with regard to alcoholism) may be most happily modified by a good environment; and it is the saddest of all observations we physicians have to make that a will, no matter how strong, may have to bend beneath the stress of a hard and uncongenial environment, from which it cannot free itself. My two previous papers have shown (and I would present the same idea in this paper) that primarily these three great factors in shaping a man's course, all deal primarily with the cell, the unit or the basis of life. An abnormal heredity is inherent in the sperm and the ovum; an unfortunate environment affects first the tissue cells; a perverse will reflects itself in cellular depravity; thus it is that a tendency to disease is developed.

Before considering the will in detail I beg to note how worthy of consideration by my colleagues are these three agencies. They should always be investigated as a part of the anamnesis in each patient we are called upon to treat; we must ascertain to what degree they have become pernicious; how, if possible, they can be eradicated; to what extent their effects can be eliminated. Our duties as physicians are much more extensive than mere drug-giving. Sometimes our procedures are really no better than that of the absent-minded physician prescribing an appetizer for a poor starved man, who told him that he had had nothing to eat in two days. We should be the wise advisers of those who come to us in all matters relating to their physical welfare—and any man's physical welfare is, after all, absolutely the most important of all things in the universe to him.

Morality is a matter which we have thus far been content to leave entirely to the clergy. But we are now coming to understand that we have ourselves a large duty to perform in these premises; it is becoming for us a real duty to instruct the clergy that the question of morality or immorality has oftentimes a physical basis. The clergy would reprehend a criminal for his acts because of his perverse will, because of his immorality or his depravity; they would require that such a man should be punished for his wickedness. But we physicians know that oftentimes a man's will, his moral sense, is absolutely conditioned upon physical defects. An editorial writer in the *Boston Medical and Surgical Journal* relates how an alienist, happening inadvertently upon a religious service conducted in a prison chapel, very cogently observed that one prisoner was unjustly suffering confinement, being manifestly microcephalic; this was so as well of another

who had prognathous jaws; and of others who showed various stigmata of degeneration. Whatever institution they should have been in, a prison certainly was not the place; for these unfortunates were so born that the moral sense must surely have become blunted or perverted. They were so constituted physically that they had no sense of right and wrong. They were unable to feel responsibility for such acts as had led to their incarceration—at least such responsibility as the law (if it were just) should take into account before subjecting anyone to the hardship and disgrace of imprisonment in a jail.

The situation is here a most difficult one for any man of just and fair instincts to reach conclusions upon. We cannot always see clearly the line separating the perverse will and responsible wickedness from unfortunate acts which have their origin in anatomical stigmata or mental disease. Nowhere else in life is a sense of proportion, of moderation of view, a right judgment, so essential. Many humanitarians have become quite extreme in holding without reservation for irresponsibility; and if their views were concurred in the modern social fabric would surely be imperilled. We must admit that it has indeed become very difficult nowadays to convict evil-doers who have committed the most heinous crimes; and that disgusted layman has much in his favor who declared that we are now for turning all prisons into hospitals; for the substitution of trepanning for hanging; of optometry for trial by jury. "Such wickedness as may not be corrected by the dentist or by the adjustment of proper spectacles may yield to deep breathing, or the rest cure or whatever the latest treatment happens to be." Still, there are cases in which the distinction is perfectly clear. For example a boy was examined by a judge in New York City, who concluded him to be the very worst boy that was ever brought before him. His record was certainly bad enough; and he could not have been a very pleasing youth. His reformatory record was extensive—nine terms in all, in various institutions. Among his many offences was a savage attack upon his mother and the throwing of a lighted lamp at his father. Clearly it would be disconcerting to one's psychism to live with such a boy. Yet there may have been "mitigating circumstances" of a physical sort in this case. We do not know if there were. But it may well be that heredity and perverting anatomical or functional stigmata had blunted completely the moral sense. If such were the case marked errors of refraction would have made study a torture; the acquirement of useful knowledge a sheer impossibility. He may have seemed perversely inattentive when in reality his hearing might have been hopelessly defective. Adenoids may have induced oxygen starvation and abnormal metabolism. In short the reason for the supposed viciousness might have had a purely and solely material basis.

We know that efforts are now making by the humane to eradicate such defects in the young; and I shall not dwell upon them here, except to observe that physical defects obtain in children to an amazing and to a rather disconcerting degree. The New York Board of Health has found, for example, that among nearly 200,000 children from five to fifteen, 60 per cent. were undernourished, 66 per cent. needed medical and surgical care, 40 per cent. had bad teeth, 38 per cent.

suffered from enlarged cervical glands, 31 per cent. had defective vision, 18 per cent. enlarged tonsils and 10 per cent. post-nasal growths.

The best definition of morality has, I believe been formulated in science. The clergy are constantly telling of the problems of sin and wickedness; they cannot be understood; we know only of their presence, that somehow or other we have to meet them and correct them as best we may. The fact is there is no mystery about these things. "Morality is the crystallization of natural law." When a man wilfully disobeys the law of his being he works misfortune to himself and disease of one kind or another results. Or his disobedience of natural law works harm to others; and this is sin and wickedness. No one's aspect of man's nature can be separated from the rest; the spiritual, the mental, the intellectual, the emotional, the physical are all intimately inter-related; and a departure from the normal in any one of these aspects is bound to induce abnormality in the others and disease in the whole organism. Thus morality is not alone the clergyman's business; dependent oftentimes, perhaps generally, upon physical conditions, it is our business to deal with, at least as much as it is the clergyman's.

When we come to consider in detail the relation of a man's will to disease we regard his unhealthful habits and customs, his improvidence, his sexual aberrations, his dietetic excesses, his alcoholism, his drug addictions.

To take the last of these first. Excessive drug-taking is made extraordinarily easy nowadays by the facility with which medicines can be procured by the layman. Our duty and our legitimate interests dictate that we should write upon most of our prescriptions "*Non repetendum sine ordine*"; thus will be prevented, to some extent at least, the prolonged taking of medicine which is intended for a specific condition and for but a brief period. The dreadful and promiscuous misuse of opium and cocaine in our day is familiar to us all; no extended comment is indicated here.

The use of tobacco before the individual has reached maturity is oftentimes most baneful. The poisonous effect upon the very young is not only upon the respiratory system; the heart and especially the nervous system are often seriously impaired. After maturity—the twenty-fifth year—tobacco may be a comfort and even a benefit.

Inordinate alcoholism is in the class with syphilis, tuberculosis, cocaineism, insanity and the like as degenerative factors; they are the agents which the hard and cruel law of the survival of the fittest employs for the elimination of the fit. Families in which these agencies are at work generally die out within a few generations. My own experience with alcoholism lies chiefly in its relation to tuberculosis. Dr. Flick considers that these two diseases have nothing to do with one another and that each must have bear the responsibility for its own baneful effects. Certain it is, however, that they co-exist with dreadful frequency. And that they react upon one another I have no doubt. Whether in given cases the alcoholism leads to tuberculosis, or whether the consumptive takes easily to alcohol—which is causative of the other—cannot always be determined. Nor is the distinction so important as

the practical point that they so often co-exist. Pulmonary tuberculosis is frequently found in persons dying in the course of chronic alcoholism; tubercle of the peritoneum or pleura is frequent in those having cirrhosis of the liver; acute miliary tuberculosis finds alcoholics an easy prey. Kelynack found pulmonary tuberculosis in 80 per cent of patients who died of alcoholic neuritis; Osler found a proportion of eight in eleven under the same circumstances. Pulmonary tuberculosis is declared to be more frequent in heavy drinkers than in people of moderate habits in the proportion of three to one. Lancereaux computes that more than one-half the cases of tuberculosis are due to alcoholism. However this may be, I recall that during my hospital internship we found half our advanced consumptives to be "chronic alcoholics." Laudouzy declared that alcoholism lays the foundation (makes the bed—"fait le lit") of tuberculosis; and another discerning Frenchman declared that "Tuberculosis is contracted across the bar."

It is difficult to explain the physical effects of alcohol. Nothing has been so much written about; and as is invariably the case under such circumstances, no definite agreement has even been reached concerning its mode of working in the economy. Many have lived to extreme old age, who have been heavy, immoderate drinkers of alcohol; "there be many more old drinkers than there be old physicians." Some flippantly consider that in many cases of longevity alcohol has been a preservative of living tissues in much the same way as it is a preservative of anatomical specimens. Professor Atwater enjoys the distinction of having been one of the most maligned of men—and unjustly in proportion to the virulence exhibited. Having been invited by a religious organization to undertake a chemical analysis of the effects of alcohol he reached unbiassed conclusions; and as the truth proved contrary to that which was anticipated he was visited with the maledictions we all recall. He demonstrated to the satisfaction of the unbiassed mind that alcohol in moderation is food and, when used properly and in moderation, is beneficial and not injurious to the system.

I believe that the bad effects of alcohol lie largely in the state of affairs which alcoholism connotes—unsanitary habits, poverty, lack of nutrition, bad food, illy-ventilated living rooms, and, worst of all, in a condition of the organism exhausted by overwork, in which the reserve force is all that is left to carry on the struggle for existence. Oftentimes alcohol is taken first with a view to keeping a defective economy up to the working point; its use is then continued in increasing amounts with the pathetic aim to stimulate the flagging energies, thus making a bad matter worse. There are some occupations in themselves conducive to alcoholism—workers in the liquor trade, barmen, waiters and hotel servants, people who are thus employed because they are by reason of their physical insufficiencies unsuited for another sort of work.

Then again the alcoholic takes insufficient food; such is the baneful effect of stimulants when taken on an empty stomach. They give a transient sense of sufficiency and destroy the appetite for food, especially, when, as is so often the case in the homes of the poor, the food is badly prepared. "Bad cooking," de-

clared some one who evidently knew what he was talking about, "drives many a man to drink." The most charming of sexes looks with abhorrence upon this male iniquity of alcoholism; yet they have their dissipation, too. This is tea, which is oftentimes practically the only nourishment of many women. And tea is quite like alcohol in its tendency to destroy the appetite for food. Besides there is a well-defined tea intoxication. Dr. Frank Jackson has wisely observed: "I cure many of my heart cases simply by requiring the tea-kettle to be removed from the stove."

There is one point about such stimulants which it is very essential to emphasize. They are most of them, as a rule, distasteful to a beginner. They are taken to begin with not because they satisfy a vicious or a depraved appetite, but because they satisfy for the time being, at least, a need of the system. Stimulants (wine, tea, coffee, tobacco) are "paratriptics." They are the savings banks of the tissues. They tide the needy system over a critical period; they are by no means always used with vicious intent. There is no people or tribe which has not its equivalent for the stimulants in vogue among us—hasheesh, the Calabar bean, cinchona, strychnine, gentian, and the like.

Has it ever occurred to my readers how often alcohol is taken by working men before breakfast? I once was called about dawn of a cold winter morning to see a man in a saloon, who had been taken very sick and was like to die. There were at that hour in this saloon a number of laborers too numerous to be waited upon in the usual way. They did not crowd up to the bar, but formed an orderly line, each man taking his early morning dram as it was served to him. These were men about to go to work—good, industrious, well-meaning fellows, to all appearances. It were nonsense—and worse than nonsense—to say these men were satisfying an evil propensity; no one really humane would say that. For these unfortunates alcohol served as a food, as it was a necessity. The dreadful economic conditions under which they lived, combined with the deadly frying-pan and the inability of their wives to make for them a decent cup of coffee, had driven them to this pass.

Among many dietetic excesses are even worse than those which are alcoholic. There is no doubt that in generations past the predominant physical vice was alcoholism. The days of Dick Steele and Boswell, of the fourth George were those of the "three-bottle men." It would seem to-day that we eat too much, especially too much meats. Prof. Chittenden ably maintains this thesis in his valuable work on "The Nutrition of Man,"* in which he throws much scientific light on dietetic problems. Of the three sorts of foodstuffs—the proteids, the carbohydrates and the fats—it is especially the first which are immoderately consumed; he declares the proteids should be cut down at least one-half. He holds that sixty grams of proteid and 2,800 calories are sufficient to maintain the body in health and strength in the highest degree of efficiency, both psychic and physical and with the least expenditure of vital forces and of time. And he submits that a dietary based upon the following would be ample to this end: For breakfast, one shredded wheat biscuit, one teacup of cream, one water roll, two one-inch cubes of butter, a cup three-

fourths coffee with the remainder cream and one lump of sugar; for lunch one teacup chicken soup, one roll, butter as at breakfast, one slice of lean bacon, one small baked potato, one rice croquette, two ounces of maple syrup and one cup of tea with a slice of lemon and a lump of sugar; for dinner, one teacup of cream of corn soup, one roll, one one-inch cube of butter, a small lamb chop broiled, a teacup of mashed potato, apple, celery, lettuce salad, with mayonnaise dressing, one split cracker, one half-inch cube American cheese, one half-teacup of bread pudding, and a demitasse with one lump of sugar.

This dietary seems to me generous enough, if I were permitted in addition just before bedtime to purloin from the larder such toothsome bits as will occupy my stomach and give me sufficient cerebral anemia to insure a peaceful night's rest. But that is an individual taste—or idiosyncrasy, if you choose. A very important point, however, is made by Chittenden—that in eating too much energy is wasted in getting rid of an unassimilable food surplus. I have found this to obtain very forcibly with regard to tuberculosis. Of course the organisms of most consumptives are half-starved by the disease; and they certainly need all the nutrition they can properly metabolize. But superalimentation is positively a mistake. And Chittenden gives us the reason why, in urging the consumptive to eat more than his tissues can assimilate, we, instead of benefiting him, are actually adding another to the many untoward conditions with which he must contend. The consumptive must be generously fed; but it is worse than error to gorge him.

To consider sexual aberrations would require a paper in itself; nor would one be necessary at this time, considering how extensively the question of the social evil has recently been ventilated. Suffice it to say that no young man needs sexual intercourse for the preservation of his health. Also, that the resort of ill fame is not likely to be eradicated under the present conditions of our civilization for the simple reason that such places are the product, the result of the social evil. The root of the social evil is not to be found in them.

Cirrhosis of the Liver.—The aetiology is still obscure; but a probable predisposing cause is an undue irritability (acquired or congenital) or susceptibility of the liver tissue. An exciting cause is probably a toxin of unknown composition and origin, which reaches the liver by the portal or by the general circulation. Such a cirrhosis has been produced experimentally by injection of a drug into the general circulation. It is likely that a toxin of this sort is produced over a long period, and at times in greater quantity than at others, for the symptoms show to definite exacerbations alternating with periods when the patient seems to improve. The enlargement of the spleen so often met with is probably also due to a toxemia which increases as the liver becomes less efficient. Germs and toxins in the blood tend to collect in the spleen, whence they may pass again in the portal blood stream to the liver and then perhaps add a portal cirrhosis to what may formerly have been a biliary cirrhosis. Thus may be explained the association of portal and biliary cirrhosis in the same liver.

*The F. A. Stokes Co., New York.

HAS PNEUMONIA A "TREATMENT?"

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.
Late Professor of Obstetrics and Dean of the Medico-Chirurgical College.

EACH unto each pursues his way, let results be what they may. But the fatality of the perilous form of disease that we call pneumonia is too enormous. In November, 1907, the MEDICAL TIMES published a paper showing that in Philadelphia, for five winter weeks, there were reported 529 deaths from pneumonia and bronchitis. For the week ending March 15, 1908, and for the previous week, there are reported the added number of 168 deaths from the same cause in Philadelphia—showing an aggregate of 697 deaths in seven winter weeks by the same disease. At this rate of deaths of pneumonic type, a close average of 100 deaths per week in chilly weather, should awaken the question proposed at the head of this important study. At certain seasons there is reported no other form of disease so rapidly and numerous fatal. An active business man, a lady teacher, persons in various walks of life, find themselves invaded with a disabling sense of prostration, an encroaching search of ache and pain, and in a few hours the lungs are clamped by the grasp of excruciating suffering at every breath, and probably in from two to five days the body lies upon its cooling board. Instead of lapsing passively into the usual repeats about the uncertainty of life and the suddenness of death, who of us have applied our careful study over the problem of the apparently resistless cause and the comparatively useless attempt to cure?

A splendid lady in midlife, widow of a prominent deceased rector of a "fashionable" church in my neighborhood, a few weeks ago leaned a while one night from her window to watch the flames of a burning house on the next street; became conscious of a chill creeping over her; closed her window; was clinched by pneumonia; and died in two days! Many another would face even a gale of frosty wind, or storm of snow or hail for much longer time, without a sign of harm to follow. Who is instructing us in the reason for fatality and for exemption from speedy departure in pneumonia? Dough unbaked remains dough—can we put this emergency through some baking process that may transform its substance into substantial rescue of imperilled life? We must learn to study for ourselves—and that from the rational foundation of the functions of physiology.

During the winter just past, acute inflammation of the lungs has invaded many homes—has dug many graves. Who was to be the next, and yet the next victim in church fraternity, in business circles, in general community, has startlingly awakened the apprehensions of intelligent society. In face of so many funerals few of adult years have experienced assurance of security against the atrocious garroter of earthly existence. The writer himself, about sixteen years ago, drifted through that chill and hazardous cloud that seemed to cruelly end all ambition and future hope—the foothold upon earth slidden away over the precipice of acutest suffering with but a thread of chance to cling to. By the favor of God's mercy as exemplified in the construction and reparative energies of the human body, he has remained to ask: Who will live through pneumonia? Has severe pneumonia a treatment that

saves life? Behind us is gathered the history of textbook prescriptions for the treatment of cases of pneumonia. Looking backward we may behold the valleys of graves and the headstones of "sacred to's." So let us not rally around the traditions of stereotyped citations for our standard rules and remedies. The formal deliverance of published textbooks are usually repeats from other written-up repeats. Textbooks may present us theories, formulas, copied diagnoses and prognoses; but they seldom are the production from first-hand cases from whom authors elaborate upon paper their own observations and experience. It is our privilege to rival the knowledge of the "authorities," and to improve upon much of it in practical treatment of our cases as viewed from the immediate locality where we find them. Our cases in private practice are materially unlike hospital cases for routine medication. We may develop better personal insight of variations of disease on lines of physiological details of study in pneumonia, and where drug medication naturally plays a minor key. Of what advantage can a stomachful of drugs be for a mass of diseased lung cells? Again there are times and cases in which drugs are loathed beyond endurance, hence if drugs are to be our reliance, we have lost our chances from the start.

As the results in fatality show us year by year, we and the people are in sorry need of a better comprehension of the perilous condition that so resistfully has baffled the prescribed management of the past. We should remember that men and women who suffer with pneumonia have as much right to expect to be as successfully relieved, and to live, as have those with other common forms of disease. Are we supposed to acknowledge steady failures by the rate of death certificates? For independent of standard authors and of precedents, if we cannot adopt means by which to save our cases, are we not simply failures as healers of the sick, and make no advance in the art and science of cure? Should we not strive to prove the wisdom of our resources, according to the type of emergency on hand, when facing danger to life? It is like a consoling draught from a wayside spring to one dying of thirst to meet a deliverer who can on sight draw upon his mental resources and handicraft, and then inform us what he did for success, independently of what Doctor Blank or Doctor Wisdom said a score of years ago and who made their conclusions from a very different standpoint and location and influences of individual environment. To prove himself successful every doctor will learn that no drug is the only one proper for the purpose aimed at. He will learn that there is no more certain way of losing a patient than by thrusting therapeutical obstacles across the reparative path of nature—no difference what property is claimed for the nature of the drug. Again, excessive or unphysiological doses, often as set down in the books, will capsize all calculation of expected medical virtue and value in many persons. Every physician in general practice of medicine will conduct his own campaigns and tactics with the prudence that selects the simplest remedies known to prove successful in his own experience and location of service.

Under general circumstances the result of any serious disease will be largely governed by the quality or condition of the blood of the individual prior to, and

at the time of, becoming ill. Let us be perpetually reminded that in cases of disease nature is the healer; reconstructive nourished blood must furnish the necessary material for repair; medicines, if judiciously selected and wisely apportioned, are the helpers; but the discreet doctor is the general manager in the emergency.

The state of the blood mainly depends on the mode of living, and the nature of the air habitually breathed, also on the quality of the water daily used. Of course we are now leaving out of account the evils of excessive spirituous drinks. These media of health, and by contrary also of sickness, make it apparent that to manage a case of real illness with precise intelligence, the local physician needs to study its problem from the habits of the individual, and from the point of its development in order to adjust the expedients of his treatment to fit the personelle and situation of the case in hand. My seeming digression applies as directly to the management of pneumonia as to any other form of sickness. For disease is so nearly a unity in nature, that any certain sort of remedy may be applied for various forms of disease, and the sanitary needs are alike in all. But I hold it also true that hurried relief by medicines is not always safe. It is too often a drug-blinded condition that masks the danger and gropes darkly to the door of death. As already said, the human body is reconstructive in its functions; it is wiser to assist these than to stupefy them. Take pneumonia, an acute lesion of the breathing organs, what can be gained from a stomachful of pharmacies that corral even the process of digestion? What elements of vitality are pirated in striving to inhale the murderous air of a close or hot room? If we are not sustaining the throne of vitality, our flourish of thermometers and records of temperature "marks no twain" that benefits, swings to the endangered no life-boat that rescues. Whatever renews suspense quickens apprehension. Apprehension? I once saw a woman die, shrieking and moaning, within an hour after I had informed her that her disease was bleeding cancer of the womb!

Since in pneumonia, as in most other forms of disease, body-heat is the opposite of body death, why awaken suspense by repeatedly thrusting the thermometer beneath the patient's tongue, and at same time studiously exclude from the room abundant supply of fresh oxygenating breathing-air? Such official flourishes are usually short-cut stumbles for closing out the sunrise of recovery. In all severe illness the blood is sick—else the illness would not be in evidence. Sick or non-oxygenated blood cells become more easily coagulated, and thus will obstruct their normal course of circulation. In the lungs and surrounding serous membranes such obstruction in the local circulation must greatly intensify the pain and difficulty of breathing. It is theoretically fancied by many that local heat is the burning fire in inflammation, and that abstracting the heat of the body in cases of inflammation should arrest the inflammation. Hence in pneumonia simple, also in pleuro-pneumonia or involvement of the extensive pleuritic coverings, they resort to persistent applications of ice-cold water upon the chest. With a few exceptions, the chill of such cold, while abstracting a ratio of heat from the skin, naturally tends to increase congestion and to induce coagulation of blood cells in

the deeper parts, and there close the minutest doorways to rescue. The air-cells in the lungs are minute. The circulation in the alveoli is extremely fine, and where a blockade may easily occur, and the air-cell be readily glued shut unless abundance of oxygen is furnished to the lungs by fresh air from the outdoors—means by which the blood cells are oxidized and kept vitally liquid. All obstruction in the lungs by coagulation of the blood cells tends to hasten dissolution of the patient. If the skin be hot and dry, under other favoring conditions of aeration and nutrition, cold water applied to chest to moderate extent may do no harm. But not so if the skin with open pores is exuding the poison of free perspiration—in itself a natural relief to the poisoned lung—for pneumonia is usually the result of inhaling poisoned breathing-air into the lung cells. Sudden arrest of such perspiration by shrinking the sweat pores of the skin with cold to the surface, drives back upon the blood-volume and the suffering lungs an avalanche of toxic debris that augments the danger when real danger exists.

In the acutely painful constriction of lung action in pneumonia, there arises a spontaneous conviction that external applications should be employed to draw or divert toward the surface an increased flow of blood which is lashing the internal chest with unbearable pain. Each, by natural instinct thinks of something, and by custom does something. There was a day when blisters were commonly applied as revulsive agents, attended by active suction of serum from the skin and the aftermath of surface soreness. Many a life was doubtless saved by timely counterirritation of a blister. Croton oil did a helpful work by producing surface pustulation. Milder applications have appealed for recognition. Various pastes of glycerine and earthy substances have been pressed into notice for popular external dressings, but pneumonia and acute pleuritic complications have neither grown less frequent nor less fatal. I have found that a warming proportion of ground capsicum mixed into cosmoline and applied upon the skin does valuable service in severe chest pains.

It is my desire to avoid assuming for other physicians what "treatment" they should adopt in their management of pneumonia. But I will be pardoned for narrating with considerate brevity the successful course pursued in three very severe and serious cases—each past middle life—in which is suggested much of great practical value when it is determined to escape death. Since my own case, of sixteen years ago, was considered of exceptional interest and result, I will present it as the most severe experience that I have personally known. We were having a mild, soft, muggy sort of winter. The poisonous fuel gases of every chimney in the city seemed to hover down into the breathing-air of the people. An epidemic of grippe prevailed. On the eighth day of January I seemed to drag around with a dreary sense of prostration. The last patient that I visited, I found the householder home with moderate grippe, sitting in his bedroom with his feet projected into the flue space from which the warm air register had been removed. The dank cloudy air was backing coal gas into his room. As I drew his attention to his mistake, I was aching all over. Several inches of snow had fallen and an immediate thaw was turning the snow to slush.

On arriving at my home I could scarcely stand up because of increasing sense of debility and pain which rapidly concentrated into my chest. I promptly got to bed because of inability to sit up. The pains becoming rapidly more acute, found could not lie down, but forced to maintain sitting position to get breath. For several days and nights was compelled to this position until skin softened and grew raw at end of spine. Cough began with sensation of tearing in left lung and left side of chest. The cutting pain of breathing extended rapidly to entire left chest and peritoneal surface from shoulder and mid-sternum to waist line, and around the left side to the spine. As the difficulty of respiration increased, I asked for two large mustard plasters, made mild, one part ground black mustard to four parts flaxseed meal, suspended over the shoulder, one around the front, the other over the back. These I bore for several hours. The reddened surface was then covered with cold cream spread upon soft muslin. My moaning with pain alarmed my family. They called a friendly physician, who prescribed bromide of potassium dissolved in liquor potass. citrat. as a refrigerative and nerve soother. The cough soon became so excruciating that I had to grasp the hands of attendants to steady me through it. Aversion of food was very pronounced, and thought of medicine repulsive. Sleep seemed impossible. Was supplied with rich flaxseed infusion for its emulsive aid to promote expectoration. The flaxseed was provided constantly for several weeks. Understanding the need of nutrition for supporting life itself, occasionally I could sip some hot milk. My stomach revolted against food that needed mastication. Dreading the effect of drugs, especially anodynes, I maintained my consciousness fairly well, and continued to plan for my escape. So oppressed in breathing, the thought of a warm or close room seemed to threaten suffocation. All heat from the furnace was shut off. It was winter, and how could I have some heat in the room entirely free from the depressing gases of the coal fire at furnace? I planned that bricks be made hot in the kitchen fire, then wrapped in newspapers, and placed upon a chair by the side of my bed to temper the room-air; also alongside my legs beneath the blankets to preserve equalization of circulation of blood whenever a sense of chilly depression crept over me with apprehension of falling vitality. This was done day or night as the struggle wavered.

My room must be artificially lighted at night. We had no electric illumination. My self-comprehension relative to poisonous carbonic oxide gas from gaslight or kerosine lamp, exhausting the oxygen of my breathing-air and supplanting the same with the poison from combustion, decided me that spermaceti candles were least harmful in the sick room because consuming least oxygen, therefore we depended on candles for night light. The sense of suffocation was so oppressive that I could not bear the smother of any dust raised in my room. Hence no broom or brush was used; but all dust was taken up from day to day by damp cloths wiped over carpet and furniture. The head of my bed was toward the street and between windows. To prevent cross-drafts, one window was covered with a quilt. The other, near by my face, was left free to be opened and closed as I needed for fresh air. Day or night, if a sense of sinking came, up went that window till relieved. When the room-air was chilly, especially at night, I

insisted that my attendants wear warm wraps or overcoats for protection from chill. The pain of breathing caught each inspiration at about quarter-deep breaths. The ribs were not allowed to expand. Respiration was limited to resemblance of panting by a rising and falling of the diaphragm. I experienced a cruel dread of drugs as I hovered along between the edges of delirium and straight consciousness; but to promote expectoration and to prevent danger of coagula forming in my blood, I occasionally swallowed a dose of muriate of ammonia dissolved in syr. prun. virg. and mint water. I positively shrunk from resort to any narcotic, lest it dry the secretions, doped consciousness and dropped me under. For similar reason no whisky or wine was used until all danger was passed. After a few days I found myself enabled to gradually settle down, by degrees, with my pillow to the reclining position and obtain more definite sleep. Prostration was so profound that I could not raise my head to turn or be propped in bed without most careful and gentle assistance. The touch of an ordinary pillow against my left side or chest could not be borne because of internal soreness; hence we had three little pillows made of down, each of different size, to adjust against me for relief. I found thoughts of encouragement from the fact that my blood had never been contaminated by any sexual disorder. One of my most intelligent lady patrons called. In surprise she exclaimed: "Why, doctor! What has made your features turn so gray and ashen?" I told her my blood had been so severely stricken, but it was naturally clean, and I would surmount the blanch. I was watched all night. To divert my mind from my precarious situation, my sons by turns would considerably play gentle music for me to listen to in my inability to sleep through the dreary hours of darkness. To prevent chill of arms and chest I constantly wore a knit woolen blouse with long sleeves. My head was kept warm with a silk skullcap. When I began to slumber I also began to profusely perspire. We adopted the rule that whenever I was found covered with sweat, if asleep, I was to be immediately waked, and take a few sips of nourishment to refresh me against exhaustion. Then by gentle degrees my sweated underwear would be removed and dry garments put on. The room being cold, this change was made underneath a blanket to prevent chill. I considered it unwise to lie in the damp and poison of sweated garments. When the times came to be bathed, it was done with alcohol and sponge freely applied beneath the blankets to avoid exposure to the air. Alcohol made a soothing cleanser, quick dryer, safer than water.

I clung to the reconstructive preservation afforded by nourishment. For nearly two weeks appetite seemed annulled. But at short intervals I picked at bits of food. I found that a fresh egg, taken raw from the shell, seemed to soothe and loosen my cough. Broiled rockfish were relished cold, picked at during the tedious nights. Ditto broiled squab. Gelatin preparations flavored with slices of oranges came in for change. I found that taking nourishment during the night hours was best to prevent increase of prostration, and helped to carry one through to a better morning. About eleven p. m. one of my sons usually brought me a few blue point raw oysters upon their opened shells after my taste was restored. Something warm was brought me in the early

morning before the family breakfast. A taste for oranges came, and oranges almost rolled into my room from various friends. As we coaxed nature and helped nature in every discreet way, convalescence began to lend its cheer. It was five weeks before I could sit for fifteen minutes out of bed. In seven weeks I could leave my room to go down to dining-room for meals. When I began to get outdoors I supported myself, thin as I had become, by the aid of crutches. The cough had gradually modified in severity, but the chest, especially over the lung, remained sore for several months. The constricted breathing, tied doubtless by adhesions to pleura, compelled me for about three years to live on half breaths. This situation gradually abated until for the last year I can again take full, deep breaths without discomfort. There is a depressed place in the left chest near lower part of lung. My usual strength has never been fully recovered. I called my case pleuro-pneumonia with severe extension over the peritoneal field. I lived while hundreds under the "treatment" of other doctors were dying, as I believed, because of confinement in hot and sweat-burdened rooms, of fermenting poultices, of unbearable lack of decent breathing-air, of excess of routine drugs, of stupefying anodyne dosages intended to silence the sentinel of pain, of neglect or cowardice in sustaining vitality with the indispensable natural aids of nourishments to bridge the crises. I clung tenaciously to avoidance of everything that could dull consciousness and thereby drop from me my chances to judge for myself. My good doctor friend called nearly every day while things looked critical—and it was great comfort to hear him say that I was holding my own.

About a month after I was enabled to get out, March of same year, I was called to an old gentleman seventy-five years of age. I found him in nearly similar condition that I had so recently recovered from, with addition of an acutely inflamed throat nearly swollen shut, also that his cough produced expectoration of blood mixed with tough phlegm. I found him sitting nearly astride a small anthracite heating stove, with his face leaning near its open door, inhaling the fire-air of the burning coal while trying to get rid of his chilliness, and moaning with increasing pain. I found that his throat and lungs were acutely inflamed. We nearly carried him upstairs to get him to bed. My recent recovery prepared me for the fight. We put him in a room without any heat. The course of treatment that had pulled myself through was immediately adopted for Mr. B. in quite every particular. But in addition it was necessary to frequently sponge out his throat with a remedial wash to remove collections of ugly debris so as to enable him to swallow remedies and fluid nourishments. His chest was so tight-splinted with pain and curtailed breathing that he was obstinately in despair of the possibility of living—even from day to day. At every visit he asserted that it was impossible to put through another night like the last one. But I daily pressed to his attention the results in my own case, told him that if he could live over another day, that gave him a chance to live over another night also, and repeated days and nights would fetch to him convalescence, and he should yet spend the summer in the delightful air of the park. In five weeks my attendance was no longer needed. And sure enough, he

resorted to the refreshing park air all summer. He lived till nearly eighty, and died of apoplexy.

The third case of "treatment" that I shall recite is of recent date and interest. From four letters in answer to my inquiries I have edited quite a connected account of the successful treatment in this interesting and instructive case. The patient is sixty-five years of age, and belongs to a prominent family in Southern Virginia. She had made a journey by railroad to visit one of her married daughters residing in another part of Virginia because that daughter was sick. In a few days the mother also was taken down ill. Then a younger daughter, living in Roanoke, a lady equipped with unusual energy and acumen, was telegraphed for. On arrival, she found her mother "desperately ill with pneumonia." I now gather her statements joined quite in her own words. "I began my treatment for pneumonia at once. The left lung was the one affected, but I worked on both so as to save the other one. I sat by her day and night for nine days: literally I did not take my eyes off her. In my concern I did not feel my loss of sleep. We had a trained nurse for my sister, but I would not trust my mother to her, although she was a great help, waiting on sister and myself." Here I pause to specially note the priceless value of working promptly, followed up by vigilance of attention, and the diplomacy of declining to trust the destiny of a good mother to the hired services of a stranger, though a nurse. To resume the account:—"Mother's cough was very severe and frequent. She suffered much pain when she coughed. There was much difficulty of breathing. On the fifth day she began to breathe with more comfort. Her expectoration at first was streaked with blood. Then it was red blood. Finally she spit up dark blood for about two days. Then the sputum began to look gradually lighter until her cough abated. She did not perspire very much. Her delirium continued the first five days that she suffered most with her lung and coughing, also four days longer with the rising" (perhaps she means roaring) "in her ears—in all about nine days. My mother sat up out of bed on the fifteenth day. In pneumonia I cover the lungs with flannel cloths saturated with hot turpentine, sweet oil and camphor, equal parts of each. I keep this on, back and front, from neck to waist, through the day. Then at night I take this off and cover the lung affected with poultices of flaxseed meal and mustard—one large spoonful of ground mustard to a cupful of meal. I cover the poultices, back and front, preferably with oil silk, to keep dampness from the clothing. When one lung only is affected, I use the poultices for that lung, and allow the turpentine cloths to remain over the other lung at night the same as during the day. When one lung is affected, to avoid disturbing the patient so much, the poultices may be slipped underneath the turpentine cloths, back and front, for over the night. The poultice need not be removed during the night—it usually stays moist and will soothe the patient to sleep. In the morning remove the poultices and go on with the flannel cloths as before. After the lung improves and cough becomes real loose, and pain has subsided, then omit the use of the poultices, but continue the turpentine flannels, freshened morning and night. Enough oil must be used to prevent the turpentine from making blisters—else the hot cloth treatment would be hindered.

"When the patient had fever, bathing freely with alcohol relieved her fever by reducing her temperature. If fever is high I always sponge one with pure alcohol. It may be diluted with witchhazel. We did not have to use anything internally to promote expectoration, because the hot applications acted like magic by keeping the cough loose. I kept my mother well nourished and stimulated after the lung began to heal. I used this treatment, which I call MY TREATMENT, for my own child when she was only two and a half year old, with pneumonia of both lungs. I nursed her day and night by myself, and therefore knew just what to do in my mother's case. True, in my child's case I had a good doctor; but in pneumonia it is nearly all in the nursing. In my mother's case my sister's physician was in attendance at the house. He did not give my mother anything internally until her lung began to heal—then he gave strychnine and digitalis to steady her heart. He had given her five-grain doses of Dover powder to promote sleep at night; but only when it was absolutely necessary.

"The doctors here use the cold treatment, or some of them do, and lose nearly every case. Again, sometimes they overstimulate or dope the patient to death. There has been an epidemic of pneumonia here."

In many important things the practical details are the essentials that shape results. We have here by this confident lady her method of conducting to good fortune her cases of severe pneumonia.

1726 North Twenty-second Street.

FECUNDITY AFTER CASTRATION AND DOUBLE OOPHORECTOMY.

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THE possibility of procreative power existing subsequent to castration of the male, likewise following the performance of double oophorectomy in the female, has not only been seriously questioned but even strenuously denied by competent and conscientious observers in ancient as well as in modern times, such judgment being evidently based upon the hypothesis that functioning supernumerary testicles with separate and distinct chordae seminales and supernumerary ovaries with accompanying ducti Fallopii have never been satisfactorily and conclusively demonstrated present by either ante- or post-mortem investigation. For example, it is said that so great an authority as Bland Sutton at one time declared that "there is no authentic instance on record of a third ovary"; likewise other equally eminent observers have as emphatically denied the occurrence of either human or mammalian polyorchism! Conversely, however, there is abundant irrefutable recorded evidence to substantiate the belief that Bland Sutton, *et al.*, are entirely erroneous in their conclusions, and therein may be found the primary incentive for this dissertation.

While the literature of the subject under consideration is by no means voluminous, casual search brings to light sufficient reliable material for the purpose of illustration. In this connection, however, the pertinent fact must not be permitted to pass unob-

served that necessarily statistical data are more or less unreliable, and that medical statistics are not entitled to unqualified exception. In compiling a contribution of this scope and character it is necessary to exclude numerous recorded instances, because of ambiguity or incompleteness of detail, which would have been germane and invaluable had they been carefully and properly prepared. Many of the excerpts presented are from the admirable work of Gould & Pyle on "The Anomalies and Curiosities of Medicine," the remainder have been abstracted and epitomized from available medical and surgical publications, a list of which will be found appended hereto. Let it be understood at the outset, however, that it is far from the intent of the writers to produce an elaborate and complete resumé by attempting to epitomize all the instances thus far recorded in which pregnancy has followed castration and oophorectomy, since to do so would unduly prolong what at best may be but an uninteresting and academic production. Their sole object will be to introduce sufficient evidence to warrant the conclusions adduced from intelligent consideration of the sum total of present knowledge concerning fecundity after castration and double oophorectomy in the *genus homo*.

The existence of supernumerary ovaries was at one time vigorously disputed, but since the researches of Beigel, Puech, Thudicum, Winckel, de Sinety, Paladino and others, the presence of multiple ovaries in a certain percentage of instances is an incontestable fact. Beigel claims that supernumerary ovaries have been found twenty-three times in five hundred bodies, and in a case recorded by Winckel there were three separate ovaries and three ovarian ligaments. It was originally believed that supernumerary ovaries (as well as supernumerary kidneys) were simply segmentations of the normal organs and connected with them; now, however, one is warranted in admitting these anomalous structures as distinct organs. And it has been suggested that persistence of these ovaries explains menstruation which sometimes occurs after oophorectomy.

Sippel records an instance of a third ovary, Manziagalli found a supernumerary ovary in the body of a still-born child, situated to the inner side of the normal organ, Winckel discovered a large supernumerary ovary connected to the uterus by its own ovarian ligament, and Klebs found two ovaries on one side, both consisting of true ovarian tissue, and connected by a band three-fifths inch in length.

Supernumerary ovaries (Doran) may be divided into three classes:

- (1) The ovarium succenturiatum of Beigel,
 - (2) Those cases in which two masses of ovarian tissue are separated by ligamentous bands,
 - (3) Entirely separate organs, as in Winckel's case.
- Doran records an instance of multiple Fallopian tubes, and Richard claims several varieties of such anomalous cases have been observed. The tubes are often found fused or adherent to the ovary or to the uterus.

Russell (1833), one of the oldest writers on the testicle, mentions a triorchid monk who was so salacious that his indomitable passion prevented him from keeping his vows of chastity! Necropsies have demonstrated the presence of three, four, five and more tes-

ticles in the same individual. Some authors claim to have demonstrated the influence of heredity in examples of polyorchism. In one instance there were found two testicles, one above the other, on the right side, and one on the left.

McCann describes an army recruit of twenty whose scrotum appeared much larger on the right than the left side, though not pendulous. On dissection a right and left testicle were observed in their normal positions; situated on the right side, between the groin and the normal testis, was a supernumerary organ having a separate cord.

Prankard mentions a man having three testicles, several instances of triorchidism were noted in recruits of the British Army, and Lane records an instance where a supernumerary testis was discovered in the right half of the scrotum of a boy of fifteen.

In a necropsy on a man killed in battle, Hohlberg detected three fully developed testes, two on the right side placed one above the other. The *London Medical Record* (1884) cites the case of a soldier of twenty-one who had a supernumerary testicle which had been erroneously diagnosed as inguinal hernia, and another who had a third testicle was observed by Bulatoff and confirmed by several of his confreres.

Venette gives an instance of four testicles, Scharff mentions five, Blasius more than three, Russell mentions four, five, and even six in one individual, and cites one instance of six testes, four of which were of usual size, two smaller than ordinary, Buffon admits the possibility of such occurrences.

Krugelstein (1842) relates the case of a man who had been completely castrated. After the wound had healed he married and his wife shortly thereafter became pregnant. Similar instances are cited by Sanchez, Consentinus, Zipans, and many others. Sedillot mentions a case recorded by Boyer in which the latter was consulted by a young man from whom he had extirpated both testicles for sarcocele. After recovery from the second operation he continued to cohabit with his wife and she later became *enceinte*.

Kramer (1857) records the case of a young peasant who performed self-emasculation with a razor, both testes being completely extirpated. Twelve days thereafter he had a seminal emission during sleep. The record does not show whether or not microscopical examination was made to determine the presence or absence of spermatozoa, and therefore the report is incomplete, but the instance is mentioned merely to show the possibility of seminal emission occurring nearly two weeks after complete castration.

Princetau (1890) describes a young man whose testicles had been removed for tuberculosis, and in whom examination detected no trace or fragment of these organs. Notwithstanding this fact the young man frequently practised coition and had ejaculations of fluid containing spermatozoa.

Sturgis (1898), after detailing numerous experiments hitherto made in the animal kingdom, and reviewing the recorded instances of pregnancy after castration in the *genus homo*, concludes:

- (1) In animals, for a varying period after complete castration, normal spermatozoa are found in the contents of the seminal vesicles.
- (2) This period varies in different animals, being six

days for the dog, seven days for the cat, and fourteen days for the guinea pig.

- (3) In man, clinical cases are recorded where fecundation of the female has occurred after coitus with the male who has been completely castrated, but in accepting the correctness of such statements we must remember the adage that "accidents may happen in the best regulated families." Still, Princetau's case (if correct) proves that spermatozoa do exist for a certain time in the seminal vesicles of a eunuch, and arguing from analogy in what occurs in animals, this is quite probable.
- (4) Still pursuing the analogy, in man, as in the dog and cat, a complete castrate may be capable of procreation, provided the coitus occur within the first seven days after the castration.

Pregnancy going to term with successful delivery frequently follows the performance of oöphorectomy with astonishing rapidity. Olier cites an instance of oöphorectomy followed by twin pregnancy in three months with normal accouchement at term. Polaillon speaks of a pregnancy consecutive to oöphorectomy, with normal delivery at term; and Crouch reports successful parturition in a patient who had previously undergone oöphorectomy by a large incision.

Parsons mentions twin pregnancy two years after oöphorectomy attended with abnormal development of one of the children. Cutter records the case of a woman who bore a child one year after the performance of oöphorectomy, Pippingskold observed two instances of pregnancy after oöphorectomy, in which the stump as well as the remaining ovary were cauterized, and Brown relates a similar instance with successful delivery. Additional cases are reported by Bixby, Harding, Walker, Mears, and others.

In those instances where impregnation occurs shortly after double oöphorectomy, the explanation has been suggested that ova deposited in the uterus prior to the operation may have been retained sufficiently long to receive the spermatozoa. Admitting such to be the fact, artificial fecundation of an ovum, derived from a fertile female, after deposition in the uterus of a sterile woman, is among the remote possibilities.

There is little doubt as to the possibility of spermatozoa deposited on the genitalia making progress to the seat of fertilization, as their power of motility and tenacity of life have been amply demonstrated. Percy records an instance in which semen was found issuing from the os uteri eight and a half days after the last sexual intercourse, and microscopic examination thereof revealed the presence of living as well as dead spermatozoa! There are on record cases of impregnation by rectal coitus, the spermatozoa finding their way into a partially occluded vaginal canal through a fistulous communication. According to Müller spermatozoa may retain their motile power in the vagina for a period of eight days, and Bayard claims to have discovered them alive three days after copulation.

Munde (1895) removed a dermoid cyst of the left ovary containing a tuft of hair the size of an egg, also the characteristic sebaceous matter. The right ovary was enlarged, showing cystic degeneration. It presented a peculiar structure at one end, which almost formed a second ovary. He states that this was one of the in-

stances in which it might have been easily possible to leave this small portion of ovarian tissue behind, and afterward had the patient conceived the operator would have been at a loss to account therefor, under the belief that both ovaries had been completely extirpated. He admits that there are a few such cases on record, but of course had the Fallopian tubes been also removed such a mistake would be unlikely to occur. Winkel has portrayed in his photographic plates several instances in which there was a third ovary.

Ill (1897) performed double oophorectomy on a woman aged twenty-eight. There was a cystic tumor on the left side, also a similar growth on the right; the left having a long pedicle was easily removed, but the right pedicle being extremely short, the operator was compelled to leave a small amount of ovarian tissue in the stump. The patient menstruated regularly for five years after the operation, the menses then ceased, and she complained of nausea, vomiting, etc. Examination revealed the characteristic bluish color of vaginal mucous membrane, cervix soft, uterus enlarged, nipples sensitive, areola deeply pigmented. The diagnosis of *cystitis* was unmistakable, and she was delivered of a living child at term. The author remarks that "the Fallopian tube may slip from the constricting ligature and thus remain *patulous*."

Kossman (1900) removed both ovaries from a woman with intense bilateral ovaritis. The operation was an anterior elyototomy, and the Fallopian tubes were left *in situ*. He was much surprised eighteen months later when informed that the woman was pregnant. In due time the child was born after an easy labor. The author was certain that no supernumerary ovary was present, as it happened he was at that time especially interested in this subject and a third ovary would hardly have escaped detection. He was not so sure, however, that in placing his ligatures and cutting away the ovaries he might not have left a small fragment of ovarian tissue in the stump. As if to further confound the wisdom of those who would bring about an artificial menopause by double oophorectomy, it is stated that this woman subsequently gave birth to another child, making two gestations with birth of two living children after the performance of double oophorectomy!

Morris (1901) cites the case of a woman, married five years, who had not been well since birth of a child four years previously. There was pain in both iliac and hypogastric regions and a fetid vaginal discharge. For two years she had suffered from dysmenorrhea, pain being most severe on the right side and persisting throughout each menstrual epoch. Sexual congress invariably induced a feeling of pain and discomfort about the rectum. The catamenia had been regular, but profuse and painful, and she had steadily lost flesh. Examination revealed a slight laceration of the cervix with discharge from its glands. The uterus was anteverted, tender, and immovable laterally, but movable to a limited extent antero-posteriorly. Marked amelioration of the symptoms followed hot vaginal douches and uterine curettage. Later when the abdomen was opened numerous adhesions were found between the ovaries, Fallopian tubes and surrounding structures. The right ovary contained a cystoma the size of a hen's egg, and the left a hematoma nearly as large as the cyst. Both ovaries and both Fallopian tubes were tied off with silk close to the uterus and removed. Recovery

was rapid and satisfactory. Menstruation recurred shortly after the operation and continued regularly and painlessly for several months; dyspareunia disappeared and sexual appetite became normal. Later there developed morning sickness, nausea, cardialgia, abdominal enlargement, and examination revealed that the woman was *enceinte*. She was delivered normally at term. Menstruation again appeared soon afterward and continued regular and normal. The author intimates the probability that some ovarian tissue must have been left behind.

Engelmann (1899) cites a case in which pregnancy followed double oophorectomy. The right Fallopian tube was permitted to remain intact, and it is probable that vestiges of ovarian tissue were also left behind at the operation. Sutton, of Pennsylvania (1896), records an instance similar to that of Engelmann in which he removed both ovaries for cystic disease, the right pedicle being severed by cautery, the left with scissors. The patient afterward became pregnant and was delivered normally at term. Robertson (1890) removed both ovaries, which were diseased, from a woman who later became pregnant and gave birth to a living child. Gordon extirpated both Fallopian tubes and both ovaries for inflammatory disease, and the woman was delivered of a child two years thereafter.

Doran (1902) cites the case of a woman aged twenty-five, who, after bearing one child, underwent oophorectomy for multilocular adenomatous cystic tumor of the left ovary. She later bore four additional children. When thirty-nine years of age she came under the author's care and he removed a similar tumor of the right ovary. Menstruation recurred after convalescence. The woman became pregnant and gave birth to another child two years after the last operation. Menstruation again appeared and continued until advent of the menopause. The explanation offered was that ovarian tissue must have existed outside of the ovary itself, Doran admitting that he has observed instances in which there was present in the ovarian ligament "detached tissue containing follicles."

Schatz removed (Doran) a large cystic tumor of the left ovary, including the outer third of the Fallopian tube, and all the ovarian tissue that could be found. The right ovary was also diseased and was tied off by means of three silk ligatures passed between it and the broad ligament, and was cut away in such a manner that a piece of ovarian tissue (at the most two centimeters broad) was left on the proximal side of the ligature. The right Fallopian tube was left intact. The patient became pregnant and was delivered of a child five years thereafter.

Baldwin (1902) records the case of a woman aged twenty-four who had given birth to two living children and was pregnant about three months. She presented two ovarian cysts, each the size of a coconut, which had become slightly adherent, but were distinct, and each had a long but small pedicle. Because of the existing pregnancy care was observed during the operation to avoid manipulation of the uterus. The pedicles were ligated and the tumors removed. Recovery was prompt, and the woman was delivered of a child at term. The author states that subsequently two additional children were born to this patient. Although it was supposed both ovaries were completely extirpated, the possibility is admitted that a small amount of ova-

rian tissue may have been left on one side or the other outside the ligature.

The same author mentions another case which may not be uninteresting in this connection: A woman aged thirty-two, mother of one child aged nine, had suffered from menorrhagia, leucorrhea, etc., for six years following an abortion at two months. Examination showed the uterus enlarged and retroverted. Local treatment, including uterine curettage, had been unsuccessful in relieving the symptoms, therefore it was considered advisable to resort to more radical surgical intervention with the intention of artificially inducing the menopause. Accordingly both ovaries and both Fallopian tubes were extirpated. The ovaries were not adherent, and every precaution was observed to effect their complete removal. Recovery from the operation was uneventful, but menorrhagia and the other concomitant distressing symptoms continued. Some time later uterine curettage was again practised without benefit. Physical examination eighteen months after the double oophorectomy revealed a small tender mass to the left of the uterus. The abdomen was reopened and the mass of tissues referred to, which was between the layers of the left broad ligament, was easily identified and removed. It was about the size and conformation of a Lima bean, and presented all the characteristics of ordinary ovarian tissue. Menstruation still continued, but was less profuse and less painful than heretofore, and her general condition was so much improved that further operative treatment seemed unwarranted. The persistence of menstruation in this case, after double oophorectomy, indicated the existence of ovarian tissue outside and independent of the ovaries, and the second operation positively demonstrated the presence of such anomalous tissue.

Meredith (1904) reports the case of a woman of thirty-five, married two months, well nourished, having always enjoyed good health. Menstruation had been regular, lasting six days, ordinarily accompanied by no suffering, but last period, seven or eight weeks before, had been distinctly painful. She had complained of nausea for several weeks, and believed herself pregnant. Physical examination revealed abdomen moderately distended, somewhat irregular in outline. Provisional diagnosis double ovarian cystoma, probably dermoid, complicated by pregnancy at about eight weeks. At the operation two ovarian tumors were removed, typical examples of dermoid growth, containing abundance of sebaceous material and hair. In both instances the elongated pedicle (including Fallopian tube and ovarian ligament) was purposely ligated and divided as far as practicable from its uterine extremity in the hope of avoiding subsequent miscarriage. On the third day after operation uterine hemorrhage developed which persisted forty-eight hours and culminated in the extrusion of a vesicular mole. Menstruation recurred regularly thereafter for eighteen months, then ceased. Nausea supervened and later other characteristic evidences of existing pregnancy, including fetal movements, became apparent. By accident the woman slipped and fell which induced premature labor, a five months' fetus being expelled. Menstruation was regular after convalescence. The author believes re-establishment of menstruation followed by pregnancy in this instance may be explained on the theory that some portion of

ovarian tissue capable of maturing follicles was left untouched at time of the operation, and that the patency of one or both Fallopian tubes was subsequently restored. His belief is that the ovarian tissue "consisted of an outlying portion in connection with the uterine extremity of one of the ovarian ligaments." The probability of there being a third ovary with its accompanying Fallopian tube was considered unlikely!

(1) It is believed the evidence cited in the foregoing justifies the positive declaration that fecundity on part of the male is possible for a limited time (exact period unknown) after complete emasculation.

(2) That in a certain (yet unknown) percentage of instances the extirpation of both testes bears no relationship whatsoever to the procreative ability of the individual, since polyorchism has been known to occur, the supernumerary testicle having its own chorda spermatica.

(3) Leaving entirely out of consideration the question of a supernumerary testis, the power of impregnation on part of the male is undoubted for at least eight days after emasculation, since living spermatozoa have been found demonstrably present in the semen of complete castrates for that length of time.

(4) The writers, however, would proceed a step further, although by so doing they may be accused of venturing upon unproven and debatable ground, i. e., suggest that spermatozoa may remain in the seminal vesicles for an indefinite period after castration, in fact until the physiological process of ejaculation shall have taken place, and that such spermatozoa may and probably do retain their vitality until finally ejected from the seminal vesicles, be the period long or short.

(5) It must not be forgotten that in the male (as in the female) the operator may be grossly misled or mistaken in regard to structures extirpated, and particularly is this statement applicable to those instances in which the normal topographical outlines are disarranged or irrevocably destroyed by existing disease or deformity. Under such circumstances it may be quite impossible to determine with any degree of accuracy that vestiges of testicular (or ovarian) tissue have or have not been left behind.

(6) Thus the explanation becomes comparatively easy as to why impregnation sometimes follows copulation of a presumably sterile male, soon after emasculation, with a potentially fertile female.

(7) The data presented appear to reasonably warrant the deduction that the presence of multiple ovaries in a certain (yet unknown) percentage of cases may be regarded as distinctly proven, the statements of Bland Sutton, *et al.*, to the contrary notwithstanding.

(8) That pregnancy occurring from coitus practised shortly after double oophorectomy may more often than otherwise be explained by retention within the uterus of ova deposited there prior to the operation.

(9) The presence of a supernumerary ovary having a separate and distinct ovarian ligament and accompanying Fallopian tube seems to be an extremely rare anomaly, although such instances have been recorded by Doran and others.

(10) In the female (as in the male) it is manifestly impossible for the operator to be always absolutely positive that he has eliminated every vestige of ovarian (or testicular) tissue, especially since when oöphorectomy is undertaken and performed it is usually for relief of palpable and demonstrable existing disease and the normal topography of surrounding structures has become decidedly altered by reason of the pathological process.

(11) The fact admits of no argument that spermatozoa deposited within the vagina or the uterus may retain their vitality and power of motility for many days (exact period unknown), and if a delayed ovum be encountered in the uterus fertilization thereof is not unlikely regardless of the time when double oöphorectomy may have been performed, or indeed whether the ovaries be absent or present.

Careful and mature consideration of the sum total of the gathered data in connection with the foregoing examples of cyesis occurring subsequent to double oöphorectomy suggests the pertinence of the following problematical propositions of inquiry:

(a) It is admitted without disputation that so long as there remains within the female abdomen sufficient ovarian tissue to permit continued maturation of Graafian follicles, ovulation will perforce be perpetuated, but if there be not present a patulous oviduct how and through what channel do the liberated ova reach the uterus?

(b) If both Fallopian tubes have been obliterated, granting that there be present a functioning supernumerary ovary, if a third oviduct do not also exist how and by what route do the liberated ova enter the uterus?

(c) Even if it be certain that in the performance of double oöphorectomy the operator has intentionally or otherwise left behind portions of ovarian tissue sufficient to insure the continuance of ovulation, in the absence of a patulous oviduct how is it possible for the liberated ova to gain entrance to the uterus?

(d) Admitting the premise of most authors that a small fragment of ovarian tissue has been left behind when performing double oöphorectomy and granting that continuation of ovulation is thereby permitted, since it is specifically stated by the majority of operators that "both Fallopian tubes were ligated and excised as close to the uterus as practicable," is not the explanation still unapparent as to the manner and route by which the liberated ova reach the uterine cavity?

(e) Likewise in those instances in which the operator after performance of double oöphorectomy positively demonstrates by the second or third invocation of surgery that there exists "extra-ovarian" functioning ovarian tissue, in the absence of a patulous Fallopian tube is not the question still unanswered, how is it possible for ova liberated from this anomalous tissue to gain entrance to the uterine cavity?

A man of sense is Admiral Evans, who, being ill, has observed, "I am in the hands of my doctor and whatever his orders are I shall submit to his judgment and obey him regardless of my own inclinations. It will be a keen disappointment to me if he does not allow me to go south, but he knows what is best for me and I shall not disobey him."

IS SHE PREGNANT?

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THIS has been a puzzling question throughout the ages and even until now, for the diagnosis of pregnancy beyond doubt and cavil is not the easy matter that the lay world is disposed to regard it. The earlier the physician can say with reasonable assurance that a woman is or is not pregnant the better it is for all parties concerned, for it may be of especial interest to the patient from the standpoint of health, esthetics and her relation to her family and society. I wish to state a fact at the outset of this article which may be only a reiteration or another case of "carrying coals to Newcastle," but we who practise medicine need a few platitudes constantly dinned in our ears. In this connection I would say do not be in a hurry about giving out a positive opinion as to whether the uterus is gravid or non-gravid. This is a snag that is ever catching the unwary and it seems that it is more often those of acknowledged competency and skill who thus run amuck. Remember that in most cases where a positive answer is desired to the above query there is not likely to be a demand for any imperative and immediate interference on your part. On the contrary the case will keep at least a few days or weeks, and seldom is life placed in jeopardy by the waiting. Time is the healer of many ills and the great agency by which many mysteries are solved, and often the physician cannot have a truer friend come to his rescue. Therefore do not be hasty in diagnosing pregnancy, remembering that while the clinical evidences are galore they are for the most part "circumstantial" and without real significance. It should be remembered that we have only a few sure signs of pregnancy and even they may be so masked or perverted as to be misleading.

In view of the foregoing facts a resume of modern methods of ascertaining whether or not a woman be *enceinte* with a chronicling of the more important symptoms and signs ought to appeal to both physicians and surgeons. The writer, however, disclaims any attempt at presenting anything new along this line, but his clinical observations may be taken for what they are worth. The signs and symptoms that are worth while are, of course, objective but those of a subjective character are by no means to be disregarded. They often blend, do the objective and subjective symptoms as in gastro-intestinal disturbances. Writers are accustomed to dividing these symptoms into three classes or trimestria. The first trimestrium ends about the fourth month; the second at the end of the sixth or seventh month; the third at the termination of gestation. This is a very arbitrary classification and cannot be followed closely. Many of the signs of incipient pregnancy remain throughout and only differ by a greater degree of intensity in ratio to the fleeting days and weeks. I shall attempt to discuss the clinical findings as manifested by the successive stages of gestation without the restrictions of time classification.

In weighing the evidences of pregnancy in a given case we should first eliminate certain moral, psychical and emotional complications that might embarrass our judgment. A woman who may be otherwise truthful, veracious and conscientious has been known to attempt deception as to the contents of her uterus.

She may attempt to deceive her friends and the physician into believing that she is not pregnant when she is, and vice versa. Her purpose may be wrong and again it may not be. The intricacies of woman are beyond our ken. In attempting to disillusion others she is often the victim of her own folly and is herself fooled. And before leaving this particular phase of the subject the writer wishes to assert the belief that most intelligent women can, under ordinary circumstances, interpret certain subjective feelings by which they may know that fecundation has taken place, this only a few hours or days after its occurrence. If she gives vent to her normal and natural instincts, freed from the trammels of fear and superstition, there is a subtle influence of psychic origin that tells her there is something doing lower down. It is true that fear and anxiety when overworked may conjure up a condition that has no real existence or may obscure signs or feelings that might otherwise be plainly of a tell-tale character. But let me repeat that ordinarily the intelligent woman has an inexplicable subjective sense of the impregnation before any physiological manifestations are in evidence. It is an invisible and unfathomable call and may not always be properly heeded, just as bum preachers sometimes misinterpret their "call" to preach. Is it uncanny or unreasonable to say that a woman cannot tell when she becomes pregnant? This is a day of precision in mechanics, when a machine can be almost made to think; then how infinitely much more ought we to expect from a soulful and sentient human being! Even in the very early hours of conception there is made upon the woman's nervous system a profound impression and adventitious thrills, carrying with them pleasure and hope or dread and despondency—all depending upon the woman, her temperament and environment. Aye, it is indeed plausible to think that a shrewd woman should be mentally responsive to the wooings of the new life that is coming into her own even in its incipency. But for obvious reasons our main dependence must be upon tangible and objective signs.

First let us consider the signs and symptoms of the early weeks, perhaps enumerating some that are not very evident until near the middle of pregnancy. For the convenience of study we will group them as follows: (1) Symptoms of nervous and psychic origin. (2) Cardio-vascular alterations. (3) Alterations in the glandular system. (4) Changes in the skin and mucous membranes. (5) Vaginal and uterine structural modifications.

The first has already been touched upon and will now be passed over lightly. These signs to be of any real diagnostic value to the physician must be taken in connection with more absolute developments which may not show up clearly at the time. Every phase of the whole catalogue of neuroses and psychoses may appear early upon the advent of conception. All the varied symptoms falling in this category must be taken for what they are actually worth and the wheat carefully sifted from the mountain of chaff.

The second group of symptoms having reference to the heart and blood vessels make their appearance very early. The heart undergoes hypertrophic changes of a physiological nature which cannot be estimated by percussion or auscultation, but its action upon the arteries, capillaries, and veins are open to precise observations. The three leading facts are: the pre-

dominant vascular activity in the region of the pelvis, determined by the developmental nisis; the correlated increase of arterial tension; the general fullness and distension of the capillaries and veins. Even in the early weeks the smaller veins may become so enlarged and tortuous as to form elevations in the vulva and vagina and there may be so prominent as to simulate a tumor or the presenting part of a child. The anus and rectum become intensely hyperemic and piles are a natural concomitant. The thighs and legs usually show the superficial veins red and branching with varicose knots at the crural arch. The prominence of these superficial veins is of great significance and is one of our strongest presumptive evidences of pregnancy. When this condition is found to exist even in young women it should elicit further inquiry which usually results in more evidence of a corroborative character. In considering the correlated increase of the arterial tension the sphygmograph may throw much light on the early diagnosis of pregnancy. In the great majority of cases there is very early an acceleration of the pulse rate, although this rule is not without its full quota of exceptions. In the early weeks or even a few days after the expected menstruation fails to materialize a quickened pulse rate may be looked for, provided it is accompanied by one other symptom, viz., dilated pupils. It is true that a congested uterus from other cause, as well as systemic derangements of various sorts, may account for these physiological changes. But in a woman with suppressed or delayed menses in whom the temperature is normal a rapid pulse and enlarged pupils are finger points that should not be ignored. Old practitioners rely on this very much. A pulse ranging from 95 to 115 without any apparent pathology back of it should make one think, no matter if it be a young lady prominent in church circles. As a rule the pulse the first month or so hangs around one hundred a good portion of the time. While I give this as a general rule and one that will make good in over 50 per cent. of cases, the pulse may in many cases be absolutely normal or even in some cases slightly subnormal. A concomitant sign with accelerated pulse rate is pulsation of the abdominal aorta, although it is not one that is so common or apparent as the former.

The changes in the glandular system are usually early and marked, the breasts being especially a center of developmental activity. Great caution and mental reserve must be employed before diagnosing pregnancy from enlargement of the breasts. The distention, development of superficial veins, darkening of the areola, and slight secretion of milk may be transitory and dependent upon some anomaly of the menstrual period. These signs are sometimes associated with ovarian and uterine disease, and again during pregnancy they may be so slight as to not present any appearance different from the ordinary. The breast signs are of much greater significance in primiparous women, for in some women who have borne children they persist in so marked a manner that it may be difficult to decide whether or not the changes observed are due to a previous gestation. However, many able physicians have great faith in the signs presented by the breasts in all cases and a great deal doubtless depends upon the acuteness of the observations. It is told of William Hunter that

he on seeing the body of a young woman in the dissecting room examined the breasts and pronounced her pregnant. She was found to have an intact hymen, but Hunter persisted and on opening the abdomen his diagnosis was verified. But most physicians find it difficult if not impossible to diagnose pregnancy from the changes in the breast in the absence of other pronounced signs. As the gestation increases the breasts enlarge and become firmer with the formation of a circle around the nipple constituting the areola, and a little later the secretion of milk. But the time at which these changes occur varies from the early weeks to the latter half. Usually these changes come about in a progressive manner. In many cases the first suspicion of pregnancy has been aroused by the dress linen having been stiffened by the oozing of milk from the breasts. In pregnancy there may usually be noted a soft and moist state of the skin of the areola, which appears raised above the surrounding skin, and in a state of turgescence. The little tubercles of Morgagni are sufficiently moist to slightly dampen the inner dress. A little later the pigmented areola gradually deepens and little venules are seen coursing over the breast and areola. These signs vary greatly in intensity in different individuals. The areola is much more marked in brunettes, but the venous development may be more prominent in blondes. When these two signs exist together it is tolerably conclusive. Robert Barnes says: "It is rare to find a case where a similar combination is produced under any other circumstances." During the first pregnancy new glandular vesicles are formed and there is therefore a new structural change in the breasts as well as in the uterus.

The changes in the skin and mucous membranes depend in some measure upon the changes in the vascular and glandular systems. A great deal might be said on this topic, or on that of pigmentation alone, but it is the purpose of this article to present the clinical aspects rather than the physiological or pathological. The pigment-phenomena are of the most importance during the first gestation, for it persists in a marked degree and is usually intensified by subsequent pregnancies. It is much more conspicuous as pregnancy is more advanced, but the discoloration on both the abdomen and breasts even in the early weeks is a matter not to be disregarded, for it may at any stage have some weight in the cumulative evidence. The same condition is occasionally simulated by uterine and ovarian diseases. A little later the superficial veins of the legs become prominent and the mucous membrane of the vagina assumes a purplish hue. Either of these conditions might exist independent of pregnancy but their co-existence are symptoms of considerable value. The melasma of the face with brown specks on the forehead, eyebrows, nose and upper lip produce a characteristic effect sometimes called the *mask of gestation*. These latter are not of much clinical value during the first half of pregnancy. A sign of considerable value is the change occurring in the mucous membrane of the vagina if supplemented by more evidences. The mucous membrane becomes early hyperemic and in a short time loses its livid color, gradually becoming purplish and pale. The venous congestions and varicosities are of much significance as has been noted above.

The *fifth* group of symptoms relates to alterations in the uterus and vagina. The increase in the size and weight and the change in the form and position of the uterus are signs that are quite trustworthy. These changes in the course of a month's time are quite perceptible if painstaking scrutiny has been exercised by the diagnostitian. The gradual softening of the os uteri from day to day is a very dependable point on which to base an opinion. It is well to ever bear in mind the old rule: "Os as hard as the nose, no pregnancy; os soft as the lips, pregnant." The entire vaginal portion of the uterus gives to the finger a soft, velvety sensation. The os may admit the tip of the finger, especially in women who have borne children. If the finger be carried along the anterior surface of the vaginal portion up to the body of the uterus we may feel that organ through the walls, the latter being depressed considerably with more or less obliteration of its rugae. Owing to its increased weight there is a dipping of the uterus in the region of the body and fundus and this tilts up the vaginal portion, which fact explains why the os is felt so high beneath the promontory as well as the smoothing out of the anterior wall of the vagina. The vaginal portion retreating upward, thus the base of the bladder, by its connection with the anterior wall of the cervix uteri, is dragged up and the urethra may be drawn a little behind the symphysis pubis. This explains the irritable bladder and the frequent desire to urinate that harasses women so often during early pregnancy. Quite early examination gives evidence of an apparent shortening of the vagina or in reality a deviation from its ordinary track. Examination further through the anterior wall reveals the fact that the uterine body is larger and heavier than it is when in a healthy, non-pregnant state. The finger may be carried around posteriorly and the weight of the uterus balanced on it, the other hand being placed upon the abdomen just above the symphysis. Thus by a tipping process the relative size and weight of the organ can be tolerably well estimated. Other conditions that may account for the uterine and vaginal symptoms just noted are fibrosis, hyperplasia and intrauterine polypi. Careful search, however, will usually eliminate these morbid processes. It is seldom that anything else than pregnancy produces the change of color in the mucous membranes. Possibly a weak portal circulation and a feeble heart may occasionally simulate it. The vaginal and uterine signs are more pronounced by the end of the second month. The body is dipping downward, and the os is still rising and is stretching the anterior vaginal roof. The fundus is more easily felt by bimanual touch a little above the level of the upper edge of the symphysis. These are all still more evident at the end of the third month. The cervix is somewhat obliterated, but quite prominent withal, and is found closer under the promontory. The early hyperemia of the vagina has been mentioned and along with it is a white, cream-like secretion hanging about the vaginal portion of the uterus. This epithelium-shedding is brought about by the intense vascularity of the mucous membrane, and nearly all women look upon the sudden appearance of a leucorrhea as evidence of arrested menses. Another very reliable diagnostic sign of early pregnancy is that the uterus up to twelve or more weeks enlarges in one lateral half and not uniformly until after the fourth month. Menstruation during pregnancy is generally the result of

implantation in one of the horns. One of the most positive signs in early pregnancy is a bulging or prominence in some part with ever-increasing change in its character, and absence of these signs is a fairly good indication of a non-gravid uterus.

Pregnancy in the early weeks or months is therefore diagnosed by its syndromes and a preponderance of evidence, as our legal friends might term it, rather than from any one or two cock-sure signs. To summarize the objective and subjective symptoms and signs that are the most important we might mention the following: Gastro-intestinal irritation in its protean form, including salivation. Morbid cravings and longings. Changes in the appearance of the breasts and nipples. Changes in the position of the uterus, which descends during the first two months and rises from the third. Unequal enlargement of the uterus. Neck of uterus becomes shorter and os patulous. Leucorrhea and turgescence of the vaginal mucous membrane with gradual change of color. Frequent pulse without fever, but accompanied by dilated pupils. Change in skin, particularly the linea alba. Dilatation of veins or venules on the thighs and breasts. Frequent micturition. Moral and psychic manifestations.

Now we come to a consideration of the diagnosis of pregnancy in its more advanced stage, or arbitrarily we will say from the third or fourth month. First auscultation sounds. These are the sounds of the fetal heart, the uterine souffle and the pulsations of the umbilical cord. A great many theories and tentative suggestions have been advanced to account for the sounds that attend the pregnant state, and if we consult the literature we may find many names of the discoveries or first exploiters of these. Before the first half of gestation has elapsed these sounds are unreliable, and even later they may not be invariably present. The placental sounds can rarely be detected before the thirteenth or fourteenth week, and are by many observers thought to be due to the passing of blood from the uterine arteries into the placental sinuses. I do not think this sign of great value, for it is not always heard in the same location at different examinations, and furthermore, may be heard for a day or so after the delivery of the placenta. Others have thought these sounds emanate from the iliac arteries, a discussion of which would not here be of clinical value. It is probable that the circulation in the uterine walls is at least a contributing factor in the causation of these sounds. It is distinctly a maternal sound and is isochronous with the maternal pulse.

The sounds produced by the active movement of the fetus may be heard any time from the third month and thus early are due to a displacement of it. Toward the end of gestation the sounds are thought to be produced by a movement of the limbs and the head. A rotation of the child may occur and on auscultation the sound is somewhat rustling in character. I do not know with what other sounds these would likely to be confounded, if any.

The fetal heart sounds are not heard with any degree of certainty before four and a half months, although some have thought they detected it as early as the third month. The peculiarity of these sounds is that they occur double and may be compared to the ticking of a watch under a number of layers of cloth. Their intensity is modified by a number of conditions and grow stronger as pregnancy advances. In women with

thick abdominal walls and a large quantity of liquor amnii they may not be detected at all. In examination the seat of greatest intensity should be carefully searched for. While the number of beats per minute ranges between 140 and 160 it should be remembered that the frequency may be much less. A slow fetal heart jeopardizes the life of the child. A few clinicians of ability have contended that the female heart beat is more rapid than the male, and a rate above 144 indicates a girl baby, while a lower rate would suggest a boy. I regard all such theories on a plane with the other methods of determining sex and entirely without clear clinical support. A quick or slow rate may be found in either sex. It has been a mooted question as to which end of the fetus the maximum intensity is nearer, but in the early months I think the sound is nearer the cephalic than the pelvic extremity. In the middle of gestation it is usually found a little above the umbilicus, but later as the head sinks a little into the pelvis the heart sounds would naturally be heard somewhat lower. This applies to head presentations, and in case of breech presentation the maximum intensity is heard on a level with the umbilicus or a little above it. In case of contracted pelvis or very large head the fetal heart may be heard as high as in breech presentation. There may be exaggerations of the maternal circulation that may simulate fetal heart sounds. To satisfy all doubts on this matter we should ascertain whether or not these sounds are isochronous with the radial pulse. In the latter event we would know that the sounds did not emanate from the fetus.

Palpation may now help us very materially to clear up the situation. If the abdominal walls are not too thick the fundus can be felt between the hands and the general contour of the uterus tolerably well traced. As the uterus rises higher from week to week it may be more easily outlined. But from a clinical standpoint, and as a means of diagnosing, palpation is more useful in determining the position and presentation than it is in saying whether pregnancy exists or not. Succussion or *ballotement* is a sign that is usually dependable. In fact this, together with the fetal heart sounds and the fetal movements, are considered the only sure signs of pregnancy. The *ballotement* test can be successfully employed only where there is sufficient liquor amnii for the fetus to float in freely. This is best accomplished by introducing the index finger against the anterior lip of the cervix and giving successive little taps. The fetus floating in its watery sac is felt to rise and slowly come back by gravitation. When the fetus is large and the quantity of water scanty this test may prove illusive, or an excessive quantity of water may render the examination nil. Ovarian tumors may give the same sensation as pregnancy in this respect, but the dominant symptoms of pregnancy are usually conspicuous by their absence.

The general objective signs become intensified as gestation advances. About the seventh month the umbilicus stands out a little beyond the abdominal arch and it is not unusual for the umbilical ring to be considerably dilated. The median streak of brown on the abdomen now becomes possessed of a deeper pigment, and this may extend in some degree over the entire abdomen and upper portion of the thighs. However, in fair women this pigmentation may be almost unnoticeable. The areola of the mammae becomes darker and wider.

Striae now furrow the abdomen in the region below the umbilicus, due to the rapid stretching of the skin under the distension of the enlarging uterus. In a first pregnancy these cracks and striae in the skin are of pinkish hue and may occasion considerable smarting. They are somewhat regular in arrangement, and form concentric zones a little below the umbilicus. New striae are formed at each succeeding gestation, and both the old and new are seen in women who have been pregnant more than once. The new are rosy in color and the old are paler, and this point has some value in legal medicine. As there is nothing absolutely sure about a woman, it should be borne in mind that she may be pregnant and have a smooth and presentable abdomen. In the various dropsies without pregnancy these striae may appear, but then they are likely to be diffused pretty well over the abdomen. The grosser signs are now so evident that the only thing left is to exclude pathological states that may simulate gestation. Under ordinary circumstances and where gestation is simple and uncomplicated this ought to present no great difficulties. But there are pathologic and neuropathic conditions that may bear great resemblance to pregnancy or even co-exist with it.

Let us first in this connection mention pseudocycis, false pregnancy or phantom pregnancy. Women who are thus fooled into the belief that they are pregnant are usually, not always, of neurotic type, and the family way is a thing they devoutly hope and long for. The ensuing condition is filled in by suggestion and an active mind. Occasionally it is experienced by women who stand in mortal fear of being thus caught. Perhaps there are more cases of phantom pregnancy occurring about the menopause than at any other time, for it is now that the woman loathes to give up her fruitfulness when she is about to lose it by the inexorable laws of involution. She longs for a baby simply because she knows she can't get it—just as many women long to vote because they know they can't. The neurotic disturbance that is a natural concomitant of the menopause causes her to magnify every sign and sensation out of the ordinary into the belief that she has conceived. The subjective symptoms may be very pronounced and there may be tangible objective evidences that lend support to the woman's belief. What physician of several years' experience has not some time been called to deliver (?) some such case? This report is about typical of this class: When living in a small town I was called to see a woman in the country several miles—at midnight, of course—to attend her in confinement. The woman was about forty-five years old and had by her first husband a family of children, more or less grown up. She was now married to a lover of her girlhood days—note the sentiment—and was anxious to have a piece of progeny by her erstwhile and now present charmer. The fickleness of her menses and a few other things, coupled with a busy imagination, deluded her into the belief that she was pregnant. She had gone through the usual catalogue of symptoms, morning sickness, frequent micturition, and later quickening, fetal movements, etc. So she thought. The breasts and abdomen had enlarged considerably. She was having regular pains when I arrived. The sanguineous discharge so often a precursor of immediate labor was present and she was not sure but the membranes had

ruptured. Incidentally everything was in readiness for her accouchement, all the "paraphernalia" that could be desired with baby clothes galore, and an old experienced woman was present to make the first toilet of the baby that never came. I expressed my belief at this time that hers was a case of no-baby, but I did not feel quite safe (in my own mind) in handing out this prognosis, for the only convincing evidence that pregnancy did not exist was a hardened condition of the cervix. Time verified my diagnosis. But I can conceive that in these cases if the fetal movements and heart sounds are obscured or absent it may take a Sherlock Holmes acumen to clear them up on short notice and the best of diagnosticians may be fooled for a time.

About the menopause when the uterus assumes its senile characteristics it is in no condition for nourishing the fetus and if conception does occur the chances are that the woman will abort.

Fibroid and other morbid growths of the uterus may bear some resemblance to gestation, but a fibroid is hard in texture and lacking in the elasticity presented by the gravid uterus. The softening of the cervix does not take place in case of such neoplasms, nor are the vaginal symptoms previously mentioned present in any appreciable degree. Haemotometra has been mistaken for pregnancy, but it is surely a poor diagnostician who would commit this error.

Of extrauterine tumors those arising from the ovaries are the more common. Their shape and contour are not so regular as the gravid uterus and there is often fluctuation and other distinguishing points. There may be a souffle discernible, but the history and symptoms of pregnancy in general are wanting. Smaller ovarian tumors that drop behind the uterus into Douglas' cul-de-sac may push the vaginal portion of the uterus forward and give it a tense and unusual feeling. Careful and painstaking study of such cases are necessary and the progress and changes should be watched from week to week. Hepatic, hydatid and renal cysts have been mistaken for pregnancy, but such mistakes are certainly rare.

Ascites must often be distinguished from pregnancy. If there is much effusion the kidneys, liver or heart are likely to show ample evidence of it. Fluctuation will also be easily elicited. In all such cases the history of the case will aid very materially in clearing up doubts and time will complete the job if by such waiting the woman's life is not unduly jeopardized. When a case is complicated, say pregnancy plus ovarian tumor or ascites, it is a very easy matter to reach erroneous conclusions. One symptom may predominate and mask another or two that may be present. Ascites and fibroid disease may co-exist in which event it is hard to distinguish the enlargement of the uterus from pregnancy. In such cases the conditions may be such as to make appropriate examination difficult if not impossible. But the advanced cases of pregnancy in which the diagnosis is problematical are limited in number and those cases around which the most interest centers are in the early weeks or months. If all the points I have so briefly covered in this article are carefully considered there will be few errors made in pronouncing a woman pregnant or the negative. I have endeavored to call attention especially to the early signs and have named a few that many physicians have regarded with little significance.

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IS THE INFLICTION OF PAIN ON THE LOWER ANIMALS IN THE INTERESTS OF SCIENCE OR OF HUMAN HEALTH JUSTIFIABLE?

FROM a preceding editorial it will be seen that, so far as our opinion goes, any further legislation in regard to vivisection, to be considered from the practical standpoint of possible general execution, must depend directly on the answer to this question.

Unfortunately, in attempting to answer this question, we immediately find that the point of view is widely different according to individual make-up and that we have to deal with sentiment. A materialist who regards both human beings and animals as mere aggregations of cells and intelligence as a physical manifestation of chemic reactions, can not logically object to the infliction of what ordinary persons call pain, either on the lower animals, mankind or even himself. At the opposite extreme, the deist who regards every death and accident and disease as a purposive act of God, must also regard pain with indifference.

The decision as to our right to inflict pain on the lower animals is necessarily one-sided, except as we are moved by sympathy. Between the zoophile who will not eat flesh, who regards it as wrong to place an animal in captivity, unless for the purpose of ministering to its comfort and whims, and who would make man subservient to the lower animals, and the one who takes the extreme orthodox view of the difference between man and the beasts, there is a long series of grades. Often the most pious are the most cruel, or, at least, the most indifferent to suffering, believing that any amount of sacrifice of the lower animals is justified by the most infinitesimal increment of human comfort.

Thus it is obvious that, with however temperate a spirit we approach the problem, we can at best state

either our opinion or that which we believe to be the average opinion of mankind.

If we concede the right to use animals as food, to captivate them for economic purposes and to ignore their supposititious desires, it necessarily follows that vivisection involving no great degree of pain, is perfectly proper. Humane societies devote much of their attention to the killing of useless animals. How much better it would be if all these animals were turned over to investigators for useful killing under anaesthesia, instead of compelling the stealing of domestic pets and the breeding of animals expressly for laboratory use.

It seems to us that any kind of experiment performed under complete anaesthesia and terminating with the death of the animal while still under anaesthesia should be freely allowed; that experimental operation, inoculation, etc., involving no more pain and discomfort than pertains to human surgery and disease under ordinary circumstances, should also be freely allowed, providing it has a definite purpose. Further than this, we are not inclined to go.

For example, it is charged that veterinary colleges often use horses for repeated and painful operations, without anaesthesia, even keeping them slung on their backs for periods of two or more days as a matter of convenience and economy, until they gradually succumb to the results of the mutilations. Now, while in actual veterinary practice, it may be necessary to operate without anaesthesia, upon a large animal accidentally injured, it is difficult to see why purely practice operations could not be done upon the dead animal or why anaesthesia could not be employed. At least, convenience in teaching and stinginess should not excuse protracted torture.

It is a comforting thought that the maximum of pain is probably no greater than is experienced in the dentist's chair, that susceptibility to pain decreases with intelligence and that discomfort is much less in animals incapable of intelligent anticipation and memory and without aesthetic and other derived ideas. It is not at all probable that death by fire, premature burial, etc., so much dreaded by human beings, is intrinsically more painful than death by traumatism, drowning, etc. At the same time, common sense teaches that protracted pain must be felt in many experiments and it is a matter of common knowledge that the more horrible forms of vivisection have produced results of little or no practical benefit to humanity.

We are by no means in favor of jumping at conclusions or of arguing by probabilities. But what sense is there in ripping open the belly of a dog to prove that shock results and that the shock is greater than when the animal is anaesthetized? Even if anyone were inclined to dispute the a priori probability, amounting to certainty, of the result, have we not abundant evidence

from the unfortunately inevitable experiments of accident?

Many of us have had the experience of a too conscientious dentist repeatedly probing the living root of a nerve with a broach. Imagine the experiment repeated for ten or twelve or fourteen hours and we have the gist of the ultra-scientific experiments as to the nature of fatigue, of nervous structures. And these highly instructive experiments have resulted merely in the demonstration of what, from the practical standpoint, we know is not so.

In many instances, experiments not necessarily painful, have been rendered excruciatingly so simply because the experimenter was too stingy or too lazy to administer an anaesthetic or to continue it when he could strap an animal so as to hold it securely, or to wait until the proper time to kill the animal and release it from its torture.

We need feel no compunctions at crippling one of the lower animals or of depriving it of special senses or brain areas, providing the operation is painless, but what shall we say of the blinded, deafened, rat, with nose cauterized to destroy its sense of smell and its feet amputated or rendered paralytic, in the endeavor to prove the presence of a so-called sixth sense of location?

In many instances vivisection has been merely the instrument of an unreasoning curiosity or ambition, without any practical humanitarian motive. In others, it seems to have been worse than this, a horrible expression of Sadism differing only in the fact that it was performed in a laboratory instead of in a brothel from the vile acts of non-professional sexual pervers.

LITERARY PATHOLOGY GONE DAFT.

A COURSE in "literary pathology" is maintained at the University of Lyons in France; and here, it seems, some rather diverting contributions to scientific literature have been evolved. Dr. Raymond Delacroix, for example, has been dissecting the psychism of Montaigne, and has set forth his impressions in an inaugural thesis entitled "*Montaigne Malade et Medicin.*" The great essayist is represented as a fresh instance demonstrating the theory that genius is a form of disease. Delacroix has gone about his annihilating work after the methods made familiar by Lombroso and his imitators. He has laboriously collected data evidencing physical, material infirmities, from which deductions are made, cock-sure enough, but somehow unconvincing to such reasonable and steady-minded men, as have not become one-sided by constant running in a single groove. Every scrap is collected to evidence that

Montaigne was not thoroughly sound physically. He suffered from a stone in the bladder. His was thus "a clear case of arthritism, manifesting itself in renal lithiasis and nephritic colic. "All this, of course, retroacted upon the cerebrum. Worse than that, his mother was a descendant of Spanish Jews. Now, everybody knows that Jewish people are frequently neurasthenic; consequently, it is as plain as the sunshine that a vicious heredity obtained in this case. Such morbid and deplorable symptoms as "a taste for solitude; a melancholy turn of spirit; love of long journeys; vanity, ambition," were characteristic of that unfortunate man; wherefore, what else than degeneracy can be expected?

In point of fact, this dissertation of Delacroix is amazingly ridiculous. It is difficult to understand, for example, how ambition can be imputed to Montaigne (and what would be proved had he been so?). He refused time and again his king's invitation to be the latter's companion; to an ambitious man no greater opportunity could in those days have been offered a Frenchman. He chose rather the peace of his beautiful though unostentatious home in the country, far from the tumultuous, the troublous and the seething life of his period—the civilization of our day is scarcely more so. From his viewpoint, in his rural environment, so conducive to reflection and to circumspection, he set down observations so wise and sane that (except the Bible and Shakespeare) no other work since his time has been more potent in shaping the courses of the thoughtful and well-balanced.

Should we imagine Montaigne to have been really of "a melancholy turn of spirit," the impression would be easily removed by turning in the index of his *Essays* to "physician," and by reading the passages thus indicated. Here will be found humor genial enough, despite the perhaps great pain under which it was composed. It will not prejudice us to-day that Montaigne had a decided grudge against the Faculty of his time. Even now there are plenty of men, who could not be called insane, that feel that way. Montaigne was vexed with physicians because they could not, or did not, relieve him of his stone. True, Ambroise Paré might have done so; but then surgery in those days hurt to a degree greater than this sufferer was willing to endure. So he continued, although he was "very sensible of acute and corporal pains," to endure his stone. For all that he had a most normal appreciation of life and health, declaring that "health is a precious thing, and the only one, in truth, meriting, that a man should lay out, not only his time, sweat, labor and goods, but also his life itself to obtain it, for as much as without it life is injurious to us. Pleasure, wisdom, learning and virtue without it wither away and vanish, and in the most quaint and solid discourses that philosophy would imprint in us to the contrary, we need no more but oppose the image

of Plato, being struck with an epilepsy or an apoplexy; and in this presumption to defy him to call the rich faculties of his soul to his assistance."

And regarding such pleasantries as our comic friends would have us believe are original in this twentieth century: They are to be found in the pages of the "melancholy" Montaigne, who has, for his part, accredited them duly to antique writers. As, for instance, a gentleman of the name of Nicocles (a contemporary of Plato) observes: "the physicians have this advantage, that the sun gives light to their successors, whilst the earth covers their failures." Again: "A physician boasting that his art was of great authorities; 'it is so, indeed,' said Nicocles, 'that it can with impunity kill so many people.'" Again: "A poor wrestler turned physician. 'Courage,' said Diogenes to him, 'thou hast done well, for now thou wilt throw those who have formerly thrown thee.'" Aesop is also well represented in this symposium.*

We confess to impatience with those psychic investigators who, when they find in the genius the odd things which would (and do) pass quite unnoticed in Smith or Jones or Brown or any man on the street, expect us to believe that such slight idiosyncrasies are an evidence of disease or degeneracy. The genius has always been a puzzle; no doubt he will always remain so. In his inconsequential queerness all men have a part; would that his divine gifts could be shared as well.

DISEASE, OLD AGE AND DEATH.

HERE are three themes than which none are more vital to mankind; and they are all considered in a most profound and at the same time most delightful way by Elie Metchnikoff in his book which in the original is entitled *Essais Optimistes* and which in the English translation appears under the title *The Prolongation of Life*.^{*} This book is a sequel to the brilliant scientist's work on *The Nature of Man*, in which he has announced his faith in the ultimate ability of the science of biology to destroy disease; and thus to bring to future generations a new kind of existence in which senescence will have no terrors. Then death will become as natural and as welcome a termination of existence on this planet as sleep is at the end of a weary day.

We wish we could believe with Metchnikoff that rational hygiene and preventive measures will ultimately rid the race of disease. These measures have already done much to improve the racial health. However, there will always be pathogenic factors enough to induce ab-

normal conditions. Diseases seem indeed to multiply with the advance of civilization. We seem to be constantly discovering new ones. We tremble, for instance, whenever an annual meeting of our dermatological conferees is in prospect; those gentlemen never adjourn without adding a dozen new affections to their nomenclature. And our ophthalmologists have found so many lesions in and about the orbit that we have recently learned of a division of their labors into six sub-specialties.

With regard to senility Metchnikoff declares that it is nearly always precocious; and that its disabilities and miseries are generally due to preventable causes. And here he is surely right. Infections rarely visit old age for the reason that long before that period is reached one has become immune through repeated vaccinations and inoculations. Vesical affections and hypostatic pneumonias are in most cases all that is to be feared by the aged. The colon, in Metchnikoff's opinion, is really the chief enemy of long life; the phenomena of senility being really due to intestinal putrefaction, which is in man especially favored by his unusually long and large intestinal tract and his peculiar diet. The avoidance of alcohol and the exclusion from the diet of rich meats and such other easily putrefying articles as raw and badly cooked foods should do much to obviate this. Metchnikoff has found, however, that the ingestion of the bacilli which cause lactic acid fermentation has the effect of inhibiting putrefaction. By all these means life should be greatly prolonged and the chief disabilities and miseries of old age should be prevented.

It is not after all an impossible ideal, that most men and women should live up to their hundredth year. Haller thought that man ought to live to two hundred years. Flourens calculated that it takes man twenty years to grow, and that he should live five times twenty, or to the century limit. Buffon concluded that the duration of animal life in general is six or seven times that of the period of growth. He calculated regarding man that his growth is attained in fourteen years after birth; and that hence the natural term of human existence should be ninety or a hundred years. In our day there are many men who are living after the scriptural limit of threescore and ten; and are well preserved both physically and intellectually. Plato, Michael Angelo, Titian, Goethe, Victor Hugo, and many others, produced some of their greatest and most important works after seventy.

Metchnikoff demonstrates to us that centenarians are not at all rare. He finds that in France nearly 150 people die every year after having passed well beyond the century limit. And in Greece, relatively to the population, centenarians are about nine times as numerous as they are in France.

The greatest of all human terrors is death. Yet

* It would indeed be difficult to find a book more satisfying and entertaining than Prof. Dowden's "Montaigne."

* Published: G. P. Putnam's Sons.

Metchnikoff deems that probably in that happy time when diseases have been suppressed, and the course of life shall have been prolonged to a mellow old age by means of scientific hygiene, death should be robbed of its terrors and be accepted gracefully and even gratefully, coming as it would in its proper and natural place at the close of a long cycle of existence; that the instinct of life would then be replaced by an instinct of death.

CONGESTION AND THE CHILD.

THE Congestion Exhibit recently held at the American Museum of Natural History in New York City has been so large, so interesting, so pregnant of suggestions, so extensive in its connotations that no student could possibly have digested all the intellectual nutriment it had to give during the too brief period of its existence. An imposing volume could be devoted to but one of its manifold aspects—the effect of congestion upon the child. Such a book would set forth the tragic consequences of overcrowding in the homes of little children; the dreadful effects of the sweatshop and the tenement life upon them; the unsanitary and unwholesome conditions which breed so large a proportion of the sickly and the defective; the tendencies which unite to juvenile delinquency and immorality; how the presence in the schools of those unfortunately grown vicious affects their normal companions, and lowers the standard of the work done; how in consequence the community must maintain special classes for the crippled, the defective or the backward.

We have here but space for comment upon one of the many charts shown in this Exhibit by the Public Education Association—that detailing an investigation which was last summer carried on in Glasgow to show the connection between the physical condition of the school children of that city and their home environment. Mentally defective children were not included. Dr. W. Leslie Mackenzie, medical member of the Local Government Board for Scotland, signed the report upon which this chart was based; and he states this to have been the most extensive investigation as to heights and weights of school children in primary and higher grade schools ever undertaken in Great Britain. The 73,000 children examined, and the school districts that were chosen, represented (as well as could be) four distinct social groups, ranging from the poorest living conditions to those of moderate comfort. The child which came from the lowest group (A) was likely to be smaller and lighter than from group (B); and this gradation remained constant through all four groupings. When these figures were considered in relation to the child's home it was found that the boy or girl from a one-room house averaged up smaller and lighter

than the two-roomed child; and so on through the series. Obviously the poorest child, living in the most overcrowded and unhealthful conditions, suffered most regarding its nutrition and its growth. "It cannot be an accident that boys from two-roomed houses should be 11.7 pounds lighter on an average than boys from four-roomed houses, and 4.7 inches smaller. Neither is it an accident that girls from one-roomed houses are, on the average, 14 pounds lighter and 5.3 inches shorter than the girls from four-roomed houses."

Some factors indicated in these statistics would be peculiar to given localities: as, the drunkenness and the hopelessly depressing Scotch Sunday in Glasgow; or the abnormalities due to immigration in large American cities. But taking them by and large, they indicate a situation which probably obtains in all greatly congested communities; and dealing, as they do, with helpless little children, the consideration of them will surely affect kindly and humane natures. The most obvious deduction from them is that the betterment of the race does not lie entirely with the sentimentalist and the abstract moralist; that no "progress" is very much worth while which is not based upon the improvement of physical living conditions. One may well conclude this without fearing to be imputed a crass materialist; science, at any rate, leaves us no other course.

ROBERT KOCH.

AMONG the many illustrious names which modern medicine can boast three are intimately associated—those of Virchow, Pasteur and Koch. The first of these great men established the cellular pathology, upon which our present-day system of medicine is based. The second demonstrated the bacterial origin of infectious diseases; and declared that it is within human power to banish all parasitic diseases from the face of the earth. It was only one of many achievements of the third that he demonstrated the bacillus which is the essential cause of tuberculosis, the disease which has been since the beginning of the race its greatest enemy and its most destructive factor. And the four requirements which he himself formulated regarding this specific agency have since become the rigid basis of all other investigations in the field of infectious diseases. By means of them modern bacteriology has been made possible. Their importance is so great that we reproduce them here:

1. The micro-organisms must be found invariably in a given disease and in no other, their numbers and distribution conforming to the lesions of the disease.
2. The micro-organisms obtained from lesions of the disease must be capable of reproduction in pure cultures.
3. These cultivated germs must be capable of producing the disease if inoculated on a susceptible animal.

4. These artificial lesions must contain the specific organisms.

It has been a matter peculiarly gratifying to the profession in this city that Dr. Koch has visited us in his vacation tour around the world; and that it has had the opportunity to entertain him in a very notable way. The German Medical Society gave him a dinner which was attended by many notable men, professional and lay. The occasion was one of international amenities, in which felicitations were exchanged between the Kaiser's representative in Washington, the Baron Speck von Sternburg, and our canny fellow-citizen, Andrew Carnegie.

The sum of Koch's contributions to human welfare and happiness is indeed enormous. A partial list of them would include his series of experiments seeking the cause and cure of the dreadful sleeping sickness, in recognition of which work the Emperor has conferred upon him the title "Excellency," which is much prized in Germany. In 1882 he discovered the comma bacillus of Asiatic cholera. In 1890 he elaborated the old tuberculin ("T. O"). In addition to this work and that in tuberculosis he has studied and experimented much upon the rinderpest, the cattle plague, and the bubonic plague.

DISEASES PECULIAR TO PHYSICIANS.

IT was a symposium of unusual interest which was recently held in the Philadelphia County Medical Society. Dr. R. G. Curtin presented a study of the diseases of medical men, some of which are unusual, some of which are quite common. He and others give evidence of angina pectoris as the "doctors' disease"; and this is quite in agreement with the recent opinion of the *British Medical Journal*. Bright's disease seems comparatively infrequent among doctors; although after a hard and excessive strain albumen and casts are to be found in the urine, to disappear after rest has been taken. Diseases of the nervous system are very frequent among physicians. The automobile, it seems, has added greatly to the nervous strain to which we are subjected. Our mortality rate is very high indeed. Various investigators compute it as from 56 to 64 years. But even 64 years is much too young in these days for any man to die. The clergy it seems have twice the chance to attain the age of sixty-five than we physicians have. They enjoy the greatest longevity among the learned professions.

It is odd how many physicians have died of the diseases in which they have done special work. Laennec was a profound student of tuberculosis; he died a consumptive. Lancisi and Corvisart died of heart disease. Boyle sank under the effect of the lesion of which he

had been the greatest illustrator. The surgeon Brodie died of a cancer of the right shoulder joint. Dupuytren died of an empyema; he refused operation, declaring he would "rather end his life through God's hand than that of a surgeon." Miculicz, whose great work was in gastric cancer, succumbed to that lesion. Fowler, of Brooklyn, having written masterfully of appendicitis, died of that disease. Lazear died of yellow fever; and his memorial tablet states: "With more than the courage and devotion of the soldier he risked and lost his life to show how a fearful pestilence is communicated and how its ravages may be prevented." Dr. Guillotin had his own head removed by the machine he invented. Many great physicians have suffered from the gout. "More wise men than fools are victims of this affection," declared Sydenham. Aortic aneurisms and cardiac degenerations have destroyed the lives of many medical men—Chambers, Bright, Liston.

Neurasthenia, alcoholism and the drug habit are a triad which afflict our profession to no slight degree. Dr. James C. Wilson very well declared that "the man who enters upon the practice of medicine with impaired powers of resistance and lack of self-discipline is liable to become neurasthenic or fall a victim of one of the drug habits."

On the whole, the temptation is strong to offer the youth who would be an Aesculapian the same advice which *Punch* gave to those about to marry—"Don't."

28,000 lunatics are now in the care of the New York State, declares Dr. Ferris, the president of the State Commission in Lunacy. The largest increase in the insane population comes from Greater New York City. In the neighborhood of the metropolis are three State hospitals, the Manhattan, on Wards Island, the King's Park and the Central Islip, both on Long Island. At present these three institutions contain 2,309 patients beyond their certified capacity. The great problem in the care of the State insane lies in keeping them within such a distance of their homes that their relatives and friends may have an opportunity to visit them, yet the overcrowding in New York City hospitals has made it necessary to transport 1,900 to other hospitals in remote points in the State. The State Lunacy Commission has urged upon the Legislature the purchase of a suitable tract of large acreage twenty-nine miles from New York, upon which it is desired to erect an institution to meet the necessities of the present situation. (We believe there is some danger of excessive institutionalism in the circumstances here outlined. There are many cases of mild or incipient insanity, which do not have their origin in gross lesions of the nervous system. Such cases should not be made to come in contact with cases of advanced insanity. The psychic contagion will surely increase the insanity in the former to an incurable degree, whereas proper care in the patient's own home would result in the cure of many a case of incipient or mild insanity).

BIBLIOGRAPHICAL

Bier's Hyperemic Treatment in Surgery, Medicine, and the Specialties. A manual of its practical application. By Willy Meyer, M.D., Professor of Surgery at the New York Post-Graduate School and Hospital; Attending Surgeon to the German Hospital, etc., and Prof. Dr. Victor Schmilden, Assistant to Professor Bier, University of Berlin, Germany. Illustrated; octavo, pp. 209. Price \$3. Philadelphia and London: W. B. Saunders Company, 1908.

This little book, written by two ardent admirers, contains in a nutshell the experiences gathered at Prof. Bier's Clinic in Berlin, where the hyperemic treatment had its birth, together with the experiences of one of the authors on American soil.

The text says that Bier's teachings are of equal importance in explanation of inflammatory processes, as they are in the treatment of the same. If they be correct, we shall have to part with a number of time-honored views, up to the present time accepted as pathologic truths.

Hitherto it was considered the physician's first duty to fight every kind of inflammation since inflammations were looked upon as detrimental.

Bier teaches just the opposite, namely to artificially increase the redness, swelling and heat, three of the four cardinal symptoms of acute inflammation. This book teaches the practical application of this subject.

The authors say, "Suffice it to say that the artificial increase of all the symptoms and attributes of the complicated phenomenon, which we call inflammation, evidently is necessary, in order to succeed in conquering the acute inflammation. The practical results obtained with the hyperemic treatment have proved beyond the shadow of a doubt the absolute correctness of the theories advanced by Bier."

Our readers should obtain a copy of the book and read for themselves its remarkable statements, the truth of which is so well vouched for.

A Text-Book of Surgical Anatomy. By William Francis Campbell, M.D., Professor of Anatomy, Long Island College Hospital; Attending Surgeon to the Methodist Episcopal, Swedish and Bushwick Hospitals; Consulting Surgeon to the Jamaica Hospital. With 319 original illustrations. Octavo, pp. 675. Price \$5. Philadelphia and London: W. B. Saunders Company, 1908.

Anatomic facts translated into their clinical values are clothed with living interest.

The single purpose of this book is to aid the student and practitioner in mastering the essentials of practical anatomy, and the arrangement of the text, together with the superb illustrations, all lead to this end.

Those facts only have been selected which have a practical bearing and those structures and regions emphasized which have a peculiar interest to the surgeon.

We commend the work to the student of anatomy and surgery.

Practice of Medicine for Nurses. A text-book for nurses and students of domestic science, and a

hand-book for all those who care for the sick. By George Howard Hoxie, A.M., M.D., Professor of Internal Medicine in the University of Kansas, with a chapter on the Technique of Nursing by Pearl L. Laptad, Principal of the Training School for Nurses of the University of Kansas. Philadelphia and London: W. B. Saunders Company, 1908. Pp. 284, octavo. Price, \$1.50.

The purpose of this book is to provide for those who care for the sick either professionally or in the home, such information as shall be most helpful in following the directions of the medical attendant, and in caring for emergencies. It is not intended to enable the nurse to diagnose or prescribe for the case.

A Manual of the Diseases of Infants and Children.

By John Ruhrah M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company, 1908. Octavo, pp. 423. Price \$2.50.

The first edition of this little book was so well received by the hundreds of medical students who required it for purposes of review that a second edition has been promptly called for.

Numerous minor changes have been made in order to perfect the text, and several sections have been added.

It is an excellent rapid reference-book for clinical use for the general practitioner as well as for the student.

It is well illustrated.

Diseases of the Breast with Special Reference to Cancer. By William L. Rodman, M.D., LL.D., Professor of Surgery in the Medico-Chirurgical College of Philadelphia; Surgeon to the Medico-Chirurgical Hospital, the Women's College Hospital, the Philadelphia General Hospital, etc. With 69 plates, of which 12 are printed in colors and 42 other illustrations. Octavo, pp. 385. Price \$4. Philadelphia: P. Blakiston's Son & Co., 1908.

The advances in the pathology and surgery of mammary affections during the past decade makes this treatise most timely, and it has been done after an active experience of twenty-five years of the author in his specialty.

The author believes in the curability of malignant disease by free and wide removal, and his book shows the technic of the operation, according to the most approved modern methods. The illustrations are superb and most practical.

The surgeon must certainly have the book.

The Diagnosis and Treatment of Pulmonary Tuberculosis. By Francis M. Pottenger, A.M., M.D. Medical Director of the Pottenger Sanatorium for diseases of the lungs and throat, Monrovia, Cal. Professor of Clinical Medicine, Medical Department, University of Southern California, etc. Octavo, pp. 377. Price, \$3.50. New York: William Wood & Company, 1908.

The author of this treatise has attempted to stimulate his readers to a broader opinion of his subject than the routine view so generally held. He claims that diagnosis consists in more than finding

bacilli in the sputum, and that its cure consists in more than the prescribing of fresh air.

The main points are early diagnosis and intelligent therapeutics in the light of modern studies in immunity.

The author has attempted to describe his own experience and has not ventured an opinion at variance with his experience. The text is mainly original in composition, practical, readable and helpful. The book is worthy a place in any library.

An Index of Treatment by Various Writers. Edited by Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital etc. and H. Stansfield Collier F.R.C.S., Surgeon to St. Mary's Hospital, etc. Revised to conform with American usage by Warren Coleman, M.D., Professor of Clinical Medicine and Instructor in Therapeutics in Cornell University Medical College, etc. New York: William Wood & Co., 1908. Octavo, pp. 888.

This work is intended as a complete guide to treatment in moderate compass, and in a convenient form for reference.

The names of the contributors is sufficient guarantee as to the value of the text.

The procedures described are considered the simplest and most effective on record.

Non-operative treatment has been dealt with in detail, as well as such minor or emergency operations as any practitioner may be called upon to perform.

It will be found a convenient, handy book, for ready reference, upon any occasion, and not bulky.

It is similar to Quain's Dictionary, excepting that it is confined to the subject of treatment, medical and surgical.

Bradycardia and Tachycardia, with complete English abstracts and foreign bibliography. Part II. in a series of monographs on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Prof. Edmund Von Neusser, Professor of the Second Medical Clinic, Vienna; Associate Editor of Nothnagel's Practice of Medicine. Authorized English Translation by Andrew McFarlane, M.D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College, etc. 150 pages. Cloth. Price, \$1.25, prepaid. New York: E. B. Treat & Co., 1908.

The enthusiasm for laboratory work must not be allowed to overshadow the consideration of vital organs, of which the heart is one of the most important. In this little work the eminent author has brought together all the factors involved in the decrease and increase of the cardiac action and has emphasized the fact that the study of the cardiac phases is no unimportant part of the work of every physician.

It is a readable and instructive book, worthy the attention of every practitioner.

An Aid to Materia Medica. By Robert H. M. Dawmy, New York Polyclinic Medical School, etc. Fourth edition, revised and enlarged. By Eden V. Delphay, M.D. 12mo., 338 pages. Price, \$1.75. New York: The MacMillan Company, 1908.

This little book presents in brief space and tabular form all the drugs and preparations recognized by the present Pharmacopoeia, with their doses ex-

pressed in both apothecaries' and metric systems; also, the exact composition and strength of all preparations, synonyms, pronunciation, and in the case of drugs of vegetable origin, the derivation and habitat are given. A table of solubilities of chemicals in water and alcohol has been included. The volume will be found useful by the student and by the practitioner.

Surgical Therapeutics. By Emory Lanphear, M.D., Ph.D., LL.D., St. Louis, Mo. Professor of Surgery, Hippocratic College of Medicine; Chief Surgeon in the Woman's Hospital of the State of Missouri. Octavo 396 pages. Chicago: The Clinic Publishing Company, 1907.

This little book on the non-operative treatment of surgical conditions, fills an absolute want, as there is no treatise in existence, describing the proper management of the patient without operation.

The text is based chiefly upon the vast experience of the author, and it is just what the physician needs who manages his own surgical cases.

It gives the proper preparation of the patient for the operative work, the best way to make him comfortable after operation, and the right management of the wound to get ideal results.

No general practitioner will regret obtaining a copy.

Coming Motherhood. Practical suggestions relating to Maternity and the care of infants and children. By L. A. Spaeth, M.D. 12mo., 93 pages. Price, \$1.00.

This little book will be found a suitable guide to prescribe to prospective young mothers.

International Clinics a quarterly of illustrated clinical lectures, and especially prepared original articles covering the whole field of medicine. Edited by W. T. Longcope, M.D., and published by J. B. Lippincott Company, has been received for April, and contains as usual a vast amount of valuable matter. We note articles on the treatment of syphilis by the injection of soluble salts of mercury; clinical aspects of blood coagulation; records of the opsonic test; paratyphoid fevers; urinary acidity with special reference to gastric acidity; mucous colitis; the normal temperature of the body; diseases of the gall bladder; perforating gastric and duodenal ulcer; import of digestive disturbances in the diagnosis of surgical lesions of the abdomen; the way of infection in tuberculosis, and one hundred and fourteen pages devoted to the progress of medicine during 1907.

Book on the Physician Himself, and Things that Concern his Reputation and Success. By D. W. Cathell, M.D. The twentieth century edition, revised and enlarged by the author and his son, William T. Cathell, A.M., M.D., Baltimore, Maryland. Octavo, pp. 411. Philadelphia: F. A. Davis Company, 1908.

This book is an essay on the personal side of the practice of medicine, and should be read by every member of the profession at least once.

The young man entering practice will find great help from a careful reading of its practical, helpful precepts, and we earnestly urge every student of medicine to possess a copy and to study it before he sets out in his life work.

In the language of the authors it will "teach those who follow its suggestions to surmount many of the obstacles and to decide a multitude of the dilemmas that arise in the course of professional life; and also aid them to discern the straight and noble path more clearly and to follow it more bravely, more faithfully and more successfully."

The text elucidates every point that can possibly be conceived of in the life of a practising physician, hence its inestimable value.

A Text-Book of Clinical Medicine. Treatment. By Clarence Bartlett, M.D., Professor of Medical Diagnosis and Clinical Medicine in the Hahnemann Medical College of Philadelphia; Visiting Physician to the Hahnemann Hospital. Philadelphia: Boericke & Tafel, 1908. Octavo, pp. 1223.

The author has attempted to prepare a text-book on treatment that shall cover the domain of general medical practice. In doing this he has invaded the field of the various specialists as far as he thinks the general practitioner should go, and at the same time indicating when the specialist should be consulted.

The author considers that while the homœopathic application of drugs is the best in results, we must bear in mind that medicines may be required for their palliative or mechanical effects as well. Hence considerable space is devoted to non-medicinal or adjuvant details of treatment in order to place his work upon a rational basis.

The opsonic method of treatment is concisely considered in a short chapter, sufficient for most purposes.

The work contains a vast amount of practical, useful information, which may be of service to any practitioner who will avail himself of it.

We cannot have too many books on treatment, providing they contain anything new and serviceable. Dr. Bartlett's effort will undoubtedly prove invaluable to the rational homœopathic practitioner, and there is a vast amount in it which will interest the unprejudiced physician.

The work is worthy of examination.

The Proceedings of the Royal Society of Medicine are published by Longmans, Green & Co., London and New York.

The Submucous Resection of the Nasal Septum, by Otto T. Freer, M.D., Professor of Rhinology and Laryngology, Chicago Polyclinic, Assistant Professor of Diseases of the Nose, Throat and Chest, Rush Medical College. 50 pages, 24 original illustrations. Price, 50 cents. Chicago: The Journal of Ophthalmology and Oto-Laryngology.

This booklet is Dr. Freer's latest and only full description of the submucous operation which he has, perhaps, done more than any other man to develop.

Progressive Medicine, Vol. I., March 1908. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 284 pages, with 11 engravings. Per annum in four cloth-bound volumes, \$9.00; in paper binding, \$6.00, carriage paid to any address. Lea & Febiger, Philadelphia and New York.

The March issue of *Progressive Medicine* deals with five important practical branches of medicine and surgery.

In the chapter on Surgery of the Head, Neck and Thorax, Prof. Charles H. Frazier, of the University of Pennsylvania, details the most recent advances in a group of closely related regions constituting about one-half of the body. Dr. Frazier considers recent advances thoroughly, and has collected records of no less than 126 cases of suture of the heart.

Amid material of so much value as the articles on Infectious Diseases, Acute Rheumatism and Croupous Pneumonia, by Dr. R. B. Preble, of Chicago, and on Diseases of Children, by Dr. Floyd M. Crandall, of New York, it is difficult to select any subject for special mention without doing injustice to others. Exception may perhaps be made in calling attention to the sections on Chronic Typhoid Bacilli Carriers, on the Status Lymphaticus, and on Infant Foods and Infant Feeding.

The department of Rhinology and Laryngology is thoroughly covered in its latest progress by Prof. D. Braden Kyle, of Philadelphia, and Otology is similarly handled by Dr. Arthur B. Duell, of New York.

The particular value of *Progressive Medicine* to every medical man, whether general practitioner, surgeon or specialist, lies in the fact that the whole practical side of medicine, in its broadest sense, is covered, so far as all advances are concerned, by writers of recognized authority, who present the subject in the form of an original and connected narrative, ready for application.

CORRESPONDENCE

WHY DO YOUNG MEN CROWD INTO THE PROFESSIONS?

To the Editor of the Medical Times.

It is generally conceded that most of the economic evils attending the practice of medicine are due to an excess of supply of physicians over the demand for their services. *Appleton's Magazine* for April contains an article on the righteousness of doctors' fees, which commiserates our profession on its hard lot—though most of the illustrative cases are of physicians far more fortunate than the average—and which also contrasts the relatively meagre incomes of professional men in general with those of business men.

These facts are widely known, or at least, readily accessible to any prospective student of medicine; why, then, has the overcrowding of our profession occurred, and why does it persist, with merely a slight reduction in numbers, now that more rigid requirements for entrance, have been established practically all over the country?

A cursory inquiry of medical students or consideration of the proportion of medical practitioners who are interested in medicine as a science, or who are devoted to it as an art, shows that fully half of the increment to our ranks year by year is due, not to any sense that one is called to a lifework, but to a purely business instinct. The latter is a perfectly proper and laudable basis for any career and, so far as we can judge, it leads to as conscientious and skillful ministrations as a sentimental "calling" to a ministry.

Evidently, then, in spite of the unfavorable financial conditions attending medical practice, there must be either some sound business reason or other attraction which leads young men to crowd into it in spite of the enormous overcrowding of the profession, or else there is an equally widespread and persistent

misconception, in spite of ample warnings. The latter alternative, we can set aside, for one cannot fool any large number of people for any considerable period.

First of all, the choice of a medical career is, in a large number of instances, essentially a choice of a professional life with mere accidental falling of the lot to medicine. The "three learned professions" naturally have a specious attraction and the ministry is equally naturally excluded for all who are not unusually good or hypocritical. Thus, it must be either law or medicine, and, so far as we can judge, law is fully as overcrowded a profession as medicine although the former branches out over a wider field of business activity and leads more naturally to other employment.

Looking at the matter impartially, it must be admitted that professional life, though not so lucrative, is, on the whole, easier than business life, and in many respects more pleasant. Then, too, we have at least two classes of young men who are attracted to professional life largely on account of its eminent respectability and social prestige, and to whom the earning capacity is not of much importance. One of these classes, abroad, would feel no shame in having no occupation at all. The other class represents families who have rather recently acquired wealth, who have not outgrown the plebeian custom of having many children and who quite deliberately set aside one or more of the rising generation for a professional career, which may not be lucrative, but for whose luster the family as a whole is glad to pay liberally.

But, in a stricter business sense, medicine does pay in spite of the fact that the profession is overcrowded and that the average income is much below what would be considered adequate by impartial judges, for a man with a professional equipment. Up to a very recent time, the requirements in education, technical training and professional ability and labor, have not been high for the medical profession and the circumstances have been such that any fairly intelligent young man could secure a license very cheaply, even with less than a common school education and with a sacrifice of leisure for a period of a fall and winter in two or at most three years, not necessarily consecutive. No other profession, least of all, those not ordinarily spoken of as "learned" has offered so easy a transition from humbler manual and clerical employment to the prestige of professional life. Moreover medicine does not require any special talent or acuteness of special senses or muscular action. In this respect it differs from dentistry, music, art and numerous other occupations, professional and otherwise, which have considerably less prestige and financial possibilities than medicine. It must not be forgotten that early deficiencies in formal education may be and often are, atoned for, nor that an uneducated man may not only make a business success of the practice of medicine, but do good work, and even rise to eminence. But, granting that the individual does not make good his educational deficiencies, does not carry on his medical studies to any great degree, and does not make a success either professionally or financially, the chances are that if he does not get drunk too often, is fairly industrious and has a fair amount of tact and common sense, he will have done much better as a physician than as a barber, street car driver, hired man, or clerk.

There is another large class of young men adequately prepared for higher business or professional life, properly ambitious, who are directed into the legal and medical professions—and so far as we can judge in approximately equal numbers into each—by business considerations which are sound in spite of the fact that these professions are overcrowded and underpaid. The article in *Appleton's Magazine* bases its comparison of business and professional careers on a grave fallacy in considering as a business man only the one who is at the head of some fairly large enterprise. Not one young man in a hundred can choose a business career in the sense of becoming or even reasonably hoping to become a bank president, railroad official, broker, or even the proprietor of a small retail store. At the crucial time of his choice he can with a small liability of failure, decide to become a physician in four years—formerly three, and not so very long ago only two—but if he decided to enter business life, it is only under rare favorable conditions that he can expect to be a business man in this sense in any definite period. Business life for him means being a clerk at ten dollars a week, or a trainman or a bank trotter or a reporter or stenographer or filling some similar poorly paid position from which the chances of promotion are largely problematic and dependent, if not on special influence, at least on the development of special qualities which enable him to change his occupation as decidedly as to pass from medicine into law or insurance.

There are extremely few independent occupations which require so little capital as medicine and which are as certain. Barring bad habits, serious illness and the like, and incapacity for a particular form of work all of which apply equally to all kinds of occupations, the man who enters medicine is practically sure of making a living and, while he may lose his accumulations—if he is lucky enough to save anything over his expenses—he can scarcely fail in the sense of losing his occupation. Then, too, a considerable number of business men at the period of life when their physical and mental forces begin to fail, find themselves in a position where they cannot dispose of their business except at a loss, where they cannot reduce their responsibilities and labors, and where a few weeks' sickness or a single misstep due to fatigue or senile change will ruin them. On the other hand, medicine—and professional occupation generally—usually allows a gradual retirement or even a reduction of work by elevation of charges so that the total income scarcely declines at all or even increases.

Thus, while under existing conditions, medical incomes are not what they should be from the standpoint of the properly equipped and adequately paid ideal, they compare very favorably with what the average man can look forward to, at the beginning of his career and it is, therefore, no wonder that this and other professions are overcrowded. *

OUR GASEOUS ENVIRONMENT.

To the Editor of the Medical Times:

The fact that our life and state of bodily health is largely dependent upon our gaseous environment should be more generally understood than is the case. The readiness with which gases diffuse through the

body or animal tissue is not viewed in its full import. We cannot live without food and water, neither can we live without a suitable gaseous environment. We recognize man as a high form of life and bacterial life as a low form. We also know that oxygen regions are well suited to human life and that hydrogen regions—regions where putrefaction is taking place—are well suited to bacterial development and existence. Do not such facts point most conclusively to the proper means of increasing human vitality and of destroying bacterial invasions of the human body? Knowing the influence of the four cardinal gases, carbon, hydrogen, oxygen, and nitrogen, knowing that they can be readily diffused through animal tissues, knowing means of artificially producing these gases, have we not a vast power over disease? Can we not blot out "The great white plague" as by a bath of purification? We can and will in the very near future. Why have we found it necessary to isolate our sick? Why have we had to hasten with our consumptive stricken patients to some high dry climate and to select a tent instead of a house for his dwelling place? Such acts are not on account of securing suitable food, water or medicine, but to secure suitable gaseous environment. It is not simply for them to breathe more oxygen, for we have during many years been able to administer this by inhalation. No, this alone will not accomplish the desired change; suitable saturations with nitrogen may also be necessary. Is not the extreme exhilaration experienced by aeronauts when in the upper atmosphere due to the changed gaseous environment? Nitrogen and oxygen almost exclusively forming the upper atmosphere. When 14 parts of nitrogen and 8 parts of oxygen is the composition of nitrous-oxide and when we know that nitrous oxide will support combustion with a brilliancy little less than oxygen and that when breathed it produces a form of exhilarant intoxication and when such a gas is diffusible through animal tissues, have we not a great stimulant at our disposal? Does not the fact that we excrete 400 grains of Urea in the 24 hours, a product of the effete nitrogen of the system indicate what a large amount of nitrogen we consume and is it thought for a moment that all of this nitrogen is obtained from the small amount of meat and bread which we have eaten. We have observed the active part which oxygen and nitrogen play in our make-up. Can we afford to overlook hydrogen? Not by any means, for in the blood alone 784 parts in 1,000 is water, two parts of hydrogen to one of oxygen—in fact, all of the organic products which go to make up the entire body have their percentage of hydrogen; likewise carbon has its place. Clinically we have noted that an abundance of oxygen will increase the redness of the blood, also the vital energies, and that continuous exposure to sulphuretted hydrogen will produce a state of hydrotheonemia, characterized by extreme pallor and a watery state of the blood and death if further exposed. Do not such examples indicate a great power in our hands over the chemical state of the system? Suppose, for illustration, we construct two chambers adjacent to each other, using the body of a man as the septum. Fill one chamber with hydrogen and the other with oxygen. Will it not be the case after a limited time that the two gases will have combined in their natural proportions? Yes, such will be the case for the ele-

mentary gases are readily diffusible through animal tissues and upon this fact rests the future of medicine or the control of disease. I have conducted many experiments upon inoculated animals, substantiating these facts, and our medical colleges should equip their laboratories for demonstrating the wonderful control over disease by an artificially produced gaseous environment. WM. MAZYCK MEMMINGER, M.D., Glasgow, Montana.

RETROSPECTIVE

Cervical Adenitis.—J. P. Webster (*Lancet-Clinic* Nov. 9, '07) considers that surgical treatment is essential for the removal of a possible source of infection more rapidly than nature would, and without the unsightly scars which are often the sequelae of ruptured abscesses. Incision and curetting are the two methods. The advantages of incision lie in its extended application, the removal of the entire gland and the small risk of disseminating tuberculosis; the disadvantages are its difficulty, the danger of wounding important vessels and nerves, the tediousness of the operation and the unsightly scars should the wound become infected. Curetting is better for glands not tuberculous and in softening tubercular glands; the incision and the scar are small. The disadvantages of curetting lie in uncertainty of cure, the limitation of this procedure, the danger of disseminating tubercle and the practical impossibility of removing all deep-lying glands. Tubercular meningitis has quickly developed after curetting. In a radical operation we incise freely along the selected line, through the skin, platysma and fascia and avoiding, whenever possible, division of superficial nerves. The free border of the sternomastoid is exposed and held aside with retractors; or a strip of gauze is passed around it and held by an assistant. The capsule of the gland is exposed, turned out with the handle of the scalpel or dissected out with a sharp knife, keeping the cutting edge toward the gland and close to the capsule. If adherent, work from the point which is least so. Dissect rather than tear out. Avoid rupture; otherwise infection is almost inevitable. If rupture does occur we apply hydrogen peroxide freely, after which we flush off with normal saline. Relax and examine all constricting bands before dividing to avoid vessels and nerves. When in doubt divide between forceps. Isolate all torn vessels and tie above and below with catgut. Make no cut in the dark; do not cut tissues which are to be seen only when put fully on the stretch. We can avoid air in veins if all bands are divided between forceps. The spinal accessory nerve is exposed only in operations upon the upper part of the posterior triangle; and it can readily be recognized by pinching the parts with forceps; if the nerve is pinched the muscles will contract under the irritation. In closing the wound we use unirritating stitches—preferably horse-hair, except at the angle or points of greatest tension, where a few fine silkworm-gut stitches should be placed. Coapt the edges very carefully. In short, straight cuts the subcuticular stitch may be employed with good cosmetic effect. Seal the edges with a light dressing of flexible collodion and cotton. Apply thick pads of cotton gauze and a roller pressure bandage. Provide rubber tissue drainage from the most dependent points of the incision. (There are

cases in which operation for tubercular glands in the neck is indicated. But any operation in this region is difficult and hazardous—decidedly major surgery. Most cases, however, are better off without operation. An operation for the condition here under consideration can almost never be deemed radical. For the glands in the neck are a local manifestation of disease, which are almost certainly existing in other parts of the body impossible to reach by surgical means.) Sims (*Pediatrics*, Feb., '08), sets forth the following admirable treatment of tuberculosis of the cervical lymphatics: Outdoor life; exercise, but never to the point of overfatigue; every possible moment in the sunshine; the bedroom windows wide open at night, the patient, however, warmly covered; a daily bath, cold if the patient is accustomed to it; digestion and the bowels carefully attended to; nutritious food. Drugs are seldom necessary—the syrup of the iodide may be indicated. Morning and evening temperature are taken and the weight is recorded. If the enlarged glands do not appear to be broken down the skin of the region involved should be thoroughly anointed at night with a ten per cent. solution of ichthyol, which is to be removed by means of soap and water next morning. If any one gland is decidedly larger than the rest and persistently remains so or tends to increase rather than to diminish, we may make a small incision and remove it. If any gland shows evidence of having broken down, either by cheesy degeneration of abscess formation, we incise and open before the capsule has been ruptured, if possible; we then curet the resulting cavity and keep open for a few days by means of a drain of gauze or rubber tissue and then treat with a ten per cent. emulsion of iodoform in glycerine.

Tuberculous laryngitis, states Pottenger in his superb work on *Pulmonary Tuberculosis*, is present as a complication in more than 50 per cent. of cases. Some observers place the percentage as high as 60 or 70. This complication being so common routine examinations of the throat are essential, especially since when treated promptly the chances of cure are excellent, while this condition in advanced cases is hopeless. Tuberculous laryngitis begins as an infiltration which may remain as such for many months; or may soon break down and form an ulcer. At first few, if any, symptoms are recognizable. Under ordinary circumstances, if such infiltrations were to appear in a larynx previously healthy, they would cause a manifest uneasiness or feeling of fulness; but in a larynx constantly irritated by coughing, as in tuberculosis, any symptoms of this sort might remain unnoticed. Sometimes irritation or fulness is observed; sometimes also a slight hoarseness; the voice tires more readily than ordinarily; shooting pains may be present. The diagnosis, however, must rest on a careful and accurate examination of the larynx; the condition should not be mistaken. The lesion is perhaps always secondary to tuberculosis elsewhere in the body; and it rarely occurs unless the lungs are affected. Of course the consumptive is, like others, subject to all forms of non-tuberculous throat affections; yet the differential diagnosis should not be difficult after repeated examinations. Any part of the larynx may be involved—the cords, the interarytenoid space, the arytenoids themselves, the ventricles or the epiglottis. A slight thickening of the mucous membrane with perhaps a vel-

vety appearance is characteristic. "We should no more require the presence of tumefactions or ulcerations in order to make a diagnosis of tuberculous laryngitis than we would require cavities and other advanced signs to diagnose pulmonary tuberculosis." The tuberculin test will settle any uncertain diagnosis. The prognosis depends greatly upon early diagnosis and proper treatment; upon whether tuberculin is intelligently used. A very large percentage of early cases, and even a fair per cent. of those far advanced (including some with ulceration) can get well. In Pottenger's experience 71.4 per cent. have been apparently cured. We treat tuberculous laryngitis upon the same principles as elsewhere in the body. Rest is most essential. No unnecessary talking, no singing or shouting or straining of the voice; when necessary the patient should whisper. A cold compress reduces inflammation, relieves the cough and comforts the throat. Two pieces of old linen are sewn together, making a compress four inches wide and long enough to reach one and one-half times around the neck. This is wet in iced water and applied so that the front of the throat will be enveloped in a double thickness. This compress is then covered by a piece of flannel which fits snug and extends over the edge, or by a bandage of cotton flannel. The edges should be well covered so as not to allow air to enter and chill the patient. Local applications to the upper air passages are valuable in proportion as they reduce catarrhal conditions and relieve cough. We attend closely to nasal respiration, using palliative measures to keep the nostrils free; mouth-breathing is injurious to the larynx. Slightly stimulating applications, such as protargol (5 to 10 per cent.) may be made to the larynx after it has been cleansed by means of an alkaline spray. This should be followed by some protective oily spray which contains menthol or eucalyptol. Ulcerations, especially if they are painful, may be dusted with orthoform used in a powder blower; one-twelfth of a grain of heroin may be added to the orthoform if cough is an aggravating factor. Pottenger has never had occasion to use lactic acid or any other harsh measures in treating tuberculous laryngitis. Focussing the sun's rays upon the parts by means of two mirrors (after the plan of Lorgo) or the use of the violet rays seems to aid healing, perhaps by causing a hyperemia of the part and thus bringing more defensive bodies in contact with the bacilli. The use of tuberculin is essential; the action of this remedy can best be controlled by the local reaction produced in the larynx. The dosage should be governed entirely by the local findings. Sufficient should be injected to cause a slight stimulation of the local process (this will show as a slight hyperemia). The dose should then not be repeated until the hyperemia has disappeared; nor should it be increased until this amount fails to react. The tuberculin here, as elsewhere, increases the amount of protective substances found in the blood through its stimulation of the physiological machinery of immunization. There is thus also caused a local congestion about the tuberculous foci, by which the protective substances are brought to bear upon the tubercle bacilli. This action has also tendency to prevent the bacilli from spreading to new foci.

Tetanus Neonatorum.—R. O. Clock reports a case of this dreadful disease (*Archiv. Pediat.*, Jany., '08).

The initial symptoms occurred on the twelfth day of life. As a rule the onset is from the 3rd to the 12th day, or later. Antitoxin was not available at the time of admission, and it was not used. The convulsions were general; eight of them were observed. Trismus was continuous until 70 grains of chloral had been administered; this produced relaxation on the fourth day after admission. During the first three of these days vomiting had been persistent. The secretion from the wound was mainly serous; but at times was blood stained. The characteristic cry was heard only in the second and third days after admission; at all other times the infant rested quietly. The vaginal discharge was an evidence of the general septic infection. The termination of the disease with pneumonia was probably due to a secondary infection. The frequent vomiting suggests that it may have been an aspiration pneumonia. The decreasing frequency of the clonic exacerbations, and the relaxation of the trismus, showed that the disease was abating. Then, too, considers Clock the fact that the umbilical wound was practically healed also tended to show that the infection had subsided. He would assume, therefore, that but for the pulmonary complication the termination would have been favorable instead of fatal.

Typhoid Infection of Ovarian Cysts.—Taylor (*Brit. Jour. Obst. and Gynec.*, Nov., '07) finds the sources of infection to be by way of the Fallopian tube; the intestine, including the vermiform appendix; in tapping; by infection of the blood-stream in systemic contagious diseases. The bacillus coli communis and the pyogenic cocci are the most frequent germs to infect and cause suppuration in ovarian cysts. Infection with the typhoid bacillus is comparatively rare, since it connotes the occurrence of this disease in a patient already suffering from an ovarian cyst. Taylor relates a very instructive and interesting case. A woman aged 37 was admitted to hospital eight months after an attack of typhoid, during her convalescence from which a small and very mobile abdominal tumor was discovered. It had gradually increased in size until admission; there were no symptoms of suppuration. A diagnosis of ovarian cystoma was made. Laparotomy disclosed a large plum-colored cystic swelling, which was veiled by adherent omentum. The appearance of this lesion suggested pedicle-torsion, which, however, did not exist; the tumor, which was of the left ovary, was removed entire. Being incised two and a half pints of a uniform, greenish-yellow purulent, odorless fluid escaped, and from it a bacillus was subsequently obtained in pure culture, which proved to be the typhoid bacterium. Its morphological, tinctorial, cultural and agglutinating properties were comprehensively studied. Moreover, the agglutinating power of the patient's serum with the typhoid bacilli proved that her previous illness was really enteric fever. There are, from a bacteriological standpoint, three varieties of post-typhoid suppuration in ovarian cysts as in other parts of the body: 1. A mixed infection, where both pyogenic cocci and the typhoid bacillus are present. 2. A secondary infection, caused by invasion of pyogenic cocci into an organ whose resisting power has been lessened as the result of enteric fever. 3. A pure infection by the bacillus typhosus alone, of which Taylor's case is a type. In addition to the case cited, he details twelve others in

which the typhoid bacillus was found in the contents of suppurating ovarian cysts.

Puerperal Infection.—Little, from his abundant experience in the Montreal Maternity, lays stress upon the following points (*Montreal Med. Jour.*): Prophylaxis should begin early in pregnancy. The better the general health the less likelihood of infection there will be and the less serious infection will be when it occurs. Profuse vaginal discharges should receive effective local treatment immediately; in most such cases copious douching with normal saline or boric acid solutions should suffice. If they do not swabbing with stronger antiseptic solutions under anesthesia will almost certainly cure; warts and erosions should be treated at the same time. Permanganate of potash and oxalic acid are valuable disinfectants. Preliminary to the conduct of aseptic labor there should be a full bath, the rectum should be emptied by an enema; and it should be advised that the vulva be shaved and disinfected. Infection by the rectum is excluded in all cases where operative interference is necessary by applying over the buttocks and perinaeum a piece of protective rubber tissue which has been moistened by chloroform. Little considers that in ordinary cases the necessary information as to the course of labor can be obtained by abdominal palpation and invagination of the perineum; that rectal examination with sterilized rubber gloves dispenses with the necessity of examination *per vaginam* (we for our part doubt this. An examination *per rectum* is at least as disagreeable to the patient as that *per vaginam*. And there is no danger when the fingers are made aseptic. Besides there are perhaps no bodily secretions which are in their action so antiseptic and so protective against bacteria as are those of the vagina.)

The correct management of the third stage is emphasized. Here Little is quite right in declaring that retention of membranes is not nearly so dangerous as digital exploration of the uterus for their removal—except when these membranes can be felt hanging out of the cervix, when the ascent of organisms from the vagina to the uterus is undoubtedly favored. The bladder should be catheterized after labor and as often as necessary. Nothing hinders involution of the uterus so much as a distended bladder. The cracks and abrasions which always appear about the vestibule will heal in a few hours if left alone.

We should recognize the varieties of sepsis. Exact diagnosis can only be attained by bacteriological examination of the lochia in utero and of the blood. The appearance in gross of the lochia suggests the nature of the infection; when stringy and gelatinous, greenish-yellow and blood-streaked, gonorrhoea is probable; in streptococcal infections the breaking down of the red blood corpuscles gives the lochia a diffuse cherry red appearance; in anaerobic infections the lochia are usually of a dirty brown color; no importance can be attached to the smell. In treating intra-uterine affections Little condemns the use of the curette as being harmful in streptococcal and valueless in gonococcal infections. Strong antiseptic solutions cannot penetrate deeply enough to be of any use; only normal salt or mild antiseptic solutions should be used locally. In severe streptococcal infections rectal salines, submammary salines and large amounts of fluids (10 to 12

litres of water in the 24 hours) should be prescribed. Serum treatment may in the future be efficacious; but thus far, however, anti-streptococcus serum has proved valueless. In the treatment of incomplete abortion we must proceed in the same way as here indicated. We remove the retained products by the finger, if we can, instead of by the curette; and we provide for free drainage from the uterus by wide dilatation of the cervix rather than by gauze plugging.

The Spoonful.—The *Lancet* well observes that the past three decades have witnessed great advances in the methods of preparing and standardizing medicines; but the latter advantage especially has been rendered nugatory by the failure to divide the ingredients of a prescription into the indicated number of doses. And this is only one of the sources of error incidental to the question of the dosage of medicines. The capacity of domestic spoons varies within very wide limits. Graduated medicine glasses are relatively seldom employed, with the result that the patient usually takes considerably more or less of the medicine than the physician intended. The public, however, will continue to take medicines by the spoonful so long as physicians prescribe them that way. To meet the difficulty the *Lancet* proposes that in writing prescriptions we give the doses in drachms, half ounces and ounces. The patient, being ignorant of the equivalent in spoonful would then be obliged to procure a proper measure. At present a correct diagnosis and a nicely balanced prescription, dispensed from the purest drugs standardized to a high degree of accuracy, are muddled, or possibly rendered useless or dangerous by the use of inaccurate medicine bottles and still more inaccurate domestic spoons.

Diphtheria and Christian Science.—Never, perhaps, have the unfortunate results of the work of Christian Science "healers" been so conspicuous as in the recent death of a young woman from diphtheria in New York City. This disease is one whose origin, course and proper treatment have been absolutely determined. Behring's antitoxin has now for years been recognized by all intelligent and sane people as one of the most beneficent triumphs of the age. The mortality from diphtheria, which used to be so great, has because of the use of this serum, been reduced to less than ten per cent. Yet the unfortunate young woman who died of it was most heartlessly and cruelly left for two weeks without medical attendance. Besides, this sufferer lay for thirteen days, having visitors daily; and yet no quarantine was placed on her room. Such fatuous ignorance and recklessness are certainly appalling.

The Tonsils and Their Removal.—Barth (*Deut. Med. Wochenschr.*, Dec. 5, '07) finds that these organs form a protective apparatus, akin to the lymph glands. Their secretion flows outward, and a constant stream of lymphocytes pours forth. Tonsillar hypertrophy means excessive functioning, and they should be removed only when they cause respiratory disturbances. Sound tonsils should not be removed; but for necrotic areas or abscesses operation is indicated. We should leave as little scar as possible. Barth believes, oddly enough, that bacteria found in the normal tonsil may be on their way out of the body, being brought thither by the lymph channels.

Mistaken Policy Regarding Smallpox.—The muni-

cipality of Rome has recently pursued the foolish policy of trying to suppress the news of an outbreak of smallpox in that city; the motive arising out of the fear of frightening away the spring tourist trade, which constitutes a large source of revenue to the capital. The method of prohibiting the sending of all telegrams referring to the outbreak has, instead of pacifying the public and allaying its fears, occasioned the wildest and most exaggerated reports. There has been almost a panic in Rome over this smallpox outbreak. All the vaccine material in the city has been exhausted and a fresh supply has been ordered from Switzerland.

Epidemic Pneumonia.—The disease may occur at times in peculiar groupings, and spread as if by direct contagion. Epidemics have frequently been reported. M. Fabyan (*Johns Hopkins Hosp. Bull.*) relates the cases of a family of ten people, six of whom developed acute lobar pneumonia within a fortnight. Only two of the family escaped being sick, one of whom lived from home and the other who returned for a while to nurse the rest of the family. The father had been ill with a "cold," hoarseness and abdominal pain three days before the onset of the first case of pneumonia, and although this disease was not definitely recognized, he may have been the source of the infection for the others. The hygienic conditions in this particular household were bad. When two of them slept together the second infection followed the first in every case in from six to nine days. One case, that of a girl of fourteen years, was fatal. There is a wide difference of opinion regarding the contagiousness of pneumonia; in Fabyan's group there were no special etiological factors to account for the apparently contagious phenomena.

Needles and Pins.—The *Lancet* relates the case of a healthy Scotch girl, aged 20 years, with no sign of hysterical tendency, but who was in the habit of putting pins in her mouth and sometimes of falling asleep without removing them. While in hospital she swallowed five pins, and was relieved of them by emesis. She then began regularly to vomit pins and got rid of nearly a hundred of them. She then "began to produce needles," and in a fortnight thirteen came out from the left nostril, the origin of the sternomastoid behind the left ear and from the anterior aspect of the right forearm. The needles were blackened and slightly eroded, and two of them were threaded with about three inches of thread.

Kallak is a pustular dermatitis common among and peculiar to the Eskimo, states Little (*Bost. Med. & Surg. Jour.*, Feb. 20, '08). It begins with slight, sometimes severe, general malaise; the eruption follows on the dorsum of the hands and feet and under surfaces of fingers and toes. At first vesicular, it soon becomes pustular. There is no inflammatory zone; the itching is intense. The pustules extend centrifugally. There is bleeding, with crusts and scales. The eruption is never weeping but is protracted in course, with thickening and discoloration. Kallak is not caused by dirt, is peculiar to the Eskimo, is not due to scurvy, nor to syphilis, does not occur when there is plenty of seal fish to eat, appears to have no associated micro-organism. Little differentiates kallak from scabies, eczema, dermatitis herpetiformis, erythema multiforme, impetigo contagiosa, acne and furunculosis. Treatment consists in adding seal meat and berries to the diet, protective dressings, lead lo-

tion or an ointment of tar and zinc oxid.

The Best Things in Therapeutics.—Eliot (*Bost. Med. & Surg. Jour.*, Feb. 20, '08) enumerates the most valuable drugs in practice: mercury in syphilis; the salicylates in rheumatism; quinine in the malarias; antitoxin in diphtheria; aconite in acute fevers; digitalis in chronic heart diseases; alcohol in cardiac weakness of acute disease; ergot in uterine and pulmonary hemorrhage; creosote in diseases of the respiratory organs; the bromides in nervous affections. (Ergot is really contraindicated in the hæmophysis of phthisis pulmonalis.)

Acute Cystitis.—M. W. Ware (*Med. Record*) believes that when once the bladder is infected (as shown by such symptoms as frequent and painful micturition of a turbid urine, with vesical tenesmus), we should enjoin rest in bed. Though the urine be cloudy the bladder should not be irrigated, for its distention would thus provoke more pain and spasm. Suppositories are indicated (of opium or codein and hyoscyamus, at frequent intervals. Hot, moist applications to the suprapubic region, and hot sitz baths, whenever available, greatly allay the vesicular spasms. Urotropin in $7\frac{1}{2}$ grain doses should be given from the beginning, to retard the growth of the infecting organisms in the bladder. Ware no longer relies on the doubtful sedative action of copious draughts of decoctions of triticum repens or uva ursi of buchu. Liberal quantities of water are an advantage in so far as they dilute an irritating, infected urine; the disadvantage exists in the frequent urination that is provoked. It is less important to prescribe alkalis to diminish the acidity, or to order benzoic acid to increase the acidity, than to reduce the degree of infection by urinary antiseptics. When acute symptoms have subsided local treatment of the infected region may be begun.

Conservative Surgery of the Tubes and Ovaries.—Brothers questions the desirability of applying conservative surgery in 160 such cases. Cystic ovaries afford an opportunity for conservatism, while those which have undergone fibrous degeneration are seldom amenable to such practice. Ovaries adjacent to pus tubes or purulent pelvic collections may safely remain undisturbed or they may be subjected to partial exsection; these ovaries, if not themselves the seat of the abscess at the time of the operation, seldom occasion trouble later. Brothers questions the desirability of applying conservative surgery to pus tubes; they had best be completely ablated, down to the horn of the uterus. This conclusion results from experience with secondary operation for infected stumps. Brothers describes plastic work on the tubes; he exsects for the purpose of inducing sterility where he has never seen new connection formed to permit of the union of the ovum and the sperm. In pelvic peritoneal adhesions, where there is much risk of injuring the annexa, tubes or ovaries in plastic operations we had best proceed with their complete extirpation, as the retention of such mutilated or damaged annexa very often jeopardize the ultimate comfort and health of the patient; secondary operations are finally required for their complete removal. Brothers divides his cases into three groups. In the first group (conservative operation on the tubes—26 cases) the results were unsatisfactory in two cases. In one of these a pelvic inflammatory mass developed a year later; in the other a secondary lap-

arotomy was needed for the removal of an infected stump left in the first operation. In group 2 (conservative work on the ovaries, in 44 cases), six patients had postoperative suffering. In group 3 (conservative work in 90 patients with tubo-ovarian adhesions) there were seven unsatisfactory results. Three of these presented subsequent to operation pelvic inflammatory masses; the remaining four required secondary operations. He concludes that the maximum necessity for secondary operation after conservative annexal surgery does not exceed seven per cent. Postoperative morbidity after such conservative surgery is, in his estimation, about 23.5 per cent.

A new treatment of tuberculosis, based on the autotoxic action of the liver has been formulated by Lemoine and Gerard (*Practitioner*, Feb., '08), who point out that bile and the biliary acids have a true chemical neutralizing effect upon the venom of the biles, and that cholesterine, in particular, behaves as an antitoxic substance. Experiments were made to determine whether cholesterine and bile extracts possess any minimizing properties against the poison of tubercle. Bacilli were injected into the peritoneum of guinea pigs to which were later given hypodermatic injections of cholesterine and biliary extracts, obtained from the bile by petroleum ether. The injections produced no unfavorable reaction; and a greater resistance to tubercle was noted in the animals experimented upon. There was no development of tubercle. Lemoine used in his wards the same products for injection and his patients were improved in general condition, the night sweats, the pulse and the fever were lessened; there was return of appetite, increased arterial tension, and increased weight. In over 250 patients treated during the last three years there has been complete improvement in tuberculosis of the first and second degree, allowing laborers to return to work, on an average, in from two to three months. In more advanced cases, with cavities and profuse expectoration, the results have been moderate.

Prevention is Better Than Cure—and Much Cheaper.—Thus wrote John Locke, that eminently practical philosopher, who was the author of the treatise on *Human Understanding*. And an excellent illustration of this text has just been furnished by the city of Pittsburg in which, through the charitable means provided by Mrs. Russell Sage, the immediate cash loss occasioned by typhoid fever has been estimated. In the Greater Pittsburg this disease has continued unabated during twenty-five years past at a yearly cash loss—in round numbers—of \$700,000. This tidy sum has been lost through a filth disease—a preventable disease. The studies regarding Pittsburg concern 194 cases in families of moderate income; 87 wage-earners were stricken—clerks, salesmen, milliners, stogy-makers, servants, etc. These patients lost in the aggregate 864 weeks, or 18.5 years of work, at a money loss of \$10,902; and those who ceased work to care for them lost an additional \$1,557. The 53 hospital cases cost the patients' families \$1,141; and public and private charity \$1,534 more. The doctors' and nurses' bills, drugs, ice, milk and other expenses of the patients who were cared for at home amounted to \$8,179; the funeral expenses of the six who died were \$1,032. "The whole loss to the community (\$24,345) for these 194 cases in two wards, would be proportional to a loss in the 57 wards of Pittsburg, with its 5,637 cases in

1907, of \$708,246."

Of the cases investigated one-quarter of the survivors suffered physical after effects which were, in half of these latter, permanent in their nature—that is those thus debilitated were a permanent burden upon their families and the community. It is computed that by the expenditure of half a million dollars a year in preventive measures typhoid fever could be practically wiped out of Pittsburg; and the expenditure would represent an insurance investment paying 40 per cent. interest.

What this one city has thus suffered many other communities in this broad land have suffered in equal measure. It would be interesting to compute the total loss to the nation; it would be worth the while of every member of municipalities both great and small to take his pad and his pencil and work at the problem for himself. When he has reached his conclusions it might then be worth his while to reflect upon his duties and his privileges as a citizen.

Influence of Heat and Cold Upon Infection in Peritonaeum.—Danielsen, (*Zentralbl. f. Chir.*, Jan. 25 '08) finds that absorption of the infection is best prevented by the application of cold. When the germs, however, are not very virulent the protective and defensive vital processes are best promoted by the application of heat. By wise discrimination here the recovery of many patients with peritonitis may be hastened. Danielsen cordially endorses Gelinsky's advocacy of superheated air in the treatment of peritonitis; but he decidedly deprecates the use of this agent in cases of very virulent infection.

We stand and sit too much, declared recently Dr. Gelbke before a body of German physicians. Chairs were known to the ancients, who used them, however, only on extraordinary occasions; cultivated persons then took their meals and their rest reclining. The bad effects of the sitting habit have not been sufficiently emphasized, although the remarkable cures effected by rest are well known. The merchant or the professional man who sits all day should recline or take exercise in the evening. The American rocking-chair receives Dr. Gelbke's approbation. To this day primitive peoples prefer the reclining to the sitting posture; and their figures, which are better and more supple than ours, are accounted for in this way, and because they lie, not on their backs, but on their stomachs. Not until late in the Middle Ages, when the change of posture at rest was made from reclining to sitting, do we find in pictures the fat human being.

Ozoena Derived from the Dog.—*The New York Medical Journal* well observes that the fondling of pet animals tends to infection much oftener than is generally supposed; and the opinion is recalled of Perez, of Buenos Ayres, that ozoena might be contracted from the dog. Perez has met with some twenty cases in which the disease was probably of canine origin. He states the Loewenberg's bacillus is found in that animal. "In view of its refractory and repulsive character, all possible pains should be taken to avoid ozoena, among them avoidance of the disgusting habit of allowing a dog to lick one's face." The practice is known to be dangerous in other directions; for example, in the conveyance of hydatid disease.

Functional Nervous Diseases.—J. Collins sets forth some fundamental principles (*Am. Jour. Med.*

Sc., Feb., '08). The treatment of psychasthenia, like that of nervous disease founded on degeneracy, should be applied to the patient himself and in considering the chief factor of the disorder—heredity. The neurasthenic usually yields to treatment when the cause no longer exists and the general health is restored, which latter is accomplished by rest, exercise, massage, thermal and mechanical agencies. The psychasthenic will usually require much more careful therapy. The nature of his ailment and the various data which must be considered in overcoming it have to be explained to him. Self-reliance and courage must be developed. Suggestion is important; hypnotism is usually unnecessary and inadvisable. Healthful reading and useful occupation must be encouraged. The general health must be improved. Introspection and constant questioning concerning the *ego* must be overcome; here teachers and parents must co-operate with the physician.

Nature's Methods of Curing Infections, states Pottenger (*Pediatrics*) consists in a series of stimulations of the body cells by certain toxic products which are found in the blood stream resulting from the infection. Thus, in tuberculosis, there are given out from the seat of infection at various intervals certain toxins which are produced by the tubercle bacillus. These, if not too toxic, stimulate the cells and cause them to produce specific antibodies, which attempt to overcome the infection. If this stimulation is excessive cell injury or destruction results and the protective bodies are not formed or, at least, not in sufficient amounts to cause a cure of the disease. Upon this production of antibodies, this stimulation of the machinery of immunization, depends the question of cure. Every germ contains within itself the properties which stimulate the cells of the host to its own destruction. Tuberculin, for instance, will, when administered carefully, in properly chosen cases, produce the necessary stimulation to cause a cure in tuberculosis. Moreover, various products made from the tubercle bacillus have this same power. After their judicious administration the specific antibodies in the blood, upon which the destruction of the tubercle bacillus and the cure of the disease depend, are increased, sometimes enormously. Coincident with this increase in specific antibodies there is also an amelioration of the symptoms and an improvement in the areas of infection.

Famine Conditions in India are acute and growing more so, states the *Evening Post*. More than 1,500,000 people are now in receipt of state relief in the form of employment on Government works or gratuitous aids. In the united provinces of Agra and Oudh, in Northern India, there were at the end of March last 957,000 engaged on relief works and 378,000 in receipt of free aid. The Viceroy observes that there are some signs of deterioration in the general condition of the people and crime is increasing. Lord Minto estimates the value of lost crops in the united provinces alone at \$75,000,000. The price of grain foods is abnormally high. "It is again the old story of a swarming population clinging to the very edge of subsistence when conditions are most favorable and reduced by the slightest shortage of rain or a backward season to extreme distress." On an area of 107,000 square miles fifty millions are struggling for a living. The problem is a tremendously difficult one, which the suzerain power in India is charged by public opinion to solve.

MISCELLANY

The German Hospital in this city has a new annex for contagious diseases. It is a two-story structure containing sixteen rooms, each one of which has a separate ventilation plant. The air before entering a chimney passes through a flame that kills all microbes.

Endowed Beds for Physicians.—Maria L. Campbell has provided for an endowment fund of \$20,000 for beds in St. Luke's Hospital in this city for the exclusive use of physicians. Any medical man may avail himself of one of these beds by applying to the hospital superintendent.

The widows of the late Major James Carroll and Dr. Jesse Lazear, have by act of the Senate at Washington, had their pensions increased to \$125 a month each, in special recognition of the services of their husbands in discovering and demonstrating on their own persons the truth of the mosquito theory of the transmission and propagation of yellow fever.

Quintuplets aggregating in weight twenty-three pounds, were recently born in Steubenville, Ohio; the mother, so it is reported, weighs but a hundred pounds. Three of the infants died within the hour of their birth; the others may live. Two of the father's brothers have been the fathers of twins, and two others the fathers of triplets. The father's first wife died after having given birth to triplets.

A smallpox epidemic has spread over all the Japanese Empire. In Tokio alone, from January 1 to March 4, there were 952 cases, 789 of which were at the latter date still under treatment; in the province of Hyogo, which includes the city of Kobe, there were 4,798 cases. Other districts suffered almost as severely. The disease exists at coaling stations for vessels for the Philippines and American ports.

One of those imaginative French scientists, so our lay namesake reports, has proved the reality of halos. "Under certain circumstances the halo can actually be photographed." In one case a neurasthenic suffering from brain fever shed from his head a halo with ten-inch rays visible to the naked eye. The eminent scientist (was he also a neurasthenic?) says that the nimbus is a symptom of pathological conditions.

The Dilated Stomach and the Heart.—Spillman and Perrin (*Zentralbl. f. Im. Med.*) report the case of a girl, 22 years old, whose stomach was dilated; when distended with fluid the sounds of her hypertrophied heart (with aortic insufficiency) were so increased that they could be heard at some distance. They even awakened the patient in her sleep. Relief was obtained for the patient by having her supper some time before retiring, otherwise the condition was extremely annoying to her.

Physicians and dentists in Cleveland have planned for a million dollar building to be erected by them for the exclusive use of the two professions. Among other reasons for this move are the constant increase in rentals in other buildings and the objection in the latter to dentists and physicians as patients, because patients constantly block and retard elevator service. The structure is to be fifteen stories high and to be modeled after a Denver building used for like purposes. The elevators will be especially constructed with speed regulators and safety devices to meet the fears of female patients.

The suicides among German school children between the years 1880 and 1903 reached the amazing total of 1,152. There were more cases among the boys than the girls, the proportion being four to one. The causes were attributed in 336 cases to fear of punishment; in 70 to mental disorders; in 68 to intemperance. Other causes were disappointment in love, religious doubts, and despair induced by the premature reading of Nietzsche and Schopenhauer. No wonder the reading of these authors should have proved pernicious; the natural pessimism of youth was of course intensified by them.

Sporothricosis is a new disease which Dr. Letulle has recently described in a paper before the Paris Academy of Medicine. This is reported to be due to a microscopic mushroom which develops in the mouth and pharynx, setting up an inflammation which is soon followed by serious ulcerations in the palate and pharynx. The initial cause seems to be the eating of raw vegetables or badly washed salads. Dr. Letulle stated that his paper was based on the work of de Beurman who, following the investigations of Schenk, an American, has made a study of this disease. Letulle knows of but one case up to the present time.

Fracture of the Neck of the Femur, states J. B. Walker, of New York, occurs more frequently under fifty years of age than was formerly believed. Any injury to the hip followed by disability should suggest the possibility of a fracture of the neck, and requires an expert examination aided by an X-ray photograph. Reduction of the deformity with complete immobilization of the fracture during the period of repair by means of a plaster spica is advised in all suitable cases. And this should be followed by early gymnastic movements active rather than passive. All weight bearing upon the fracture should be avoided for from three to four months.

The lowest death rate ever known in New York City for the months of January, February and March has been achieved this year. It is 18.43, the actual number of deaths being 20,309. The rate for this first quarter during the last ten years has been 20.52 per thousand. Queen's Borough led with a record of 16.22 per thousand; her record for the past ten years has been 17.77. Brooklyn's rate was 17.76 as against 19.42 for ten years. Manhattan had 18.75 deaths a thousand, as against 20.31 for the past decade. Richmond's rate was 19.52, compared to 21.58 for ten years. The Bronx has the highest rate—20.62—her average for the past decade was 22.49.

Osteopaths Not Physicians.—The Corporation Counsel of New York City recently argued that osteopaths should not be registered as physicians; he recommended that they should not be considered as such within the meaning of the law in case of the death of a patient. The whole question, he declared, should be investigated and passed on by a court. "The practice of osteopathy is mentioned as distinct from the practice of medicine. The holder of a license to practice osteopathy is not allowed to practice medicine except so far as osteopathy enters the field of medicine. The holder of such a license derives from the act no new right except the privilege of practicing osteopathy, provided neither drugs nor surgical instruments are used."

IS THERE SUCH A DISEASE AS ABORTIVE TYPHOID?

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WITHIN the last couple of weeks my attention has again been directed to this old and much mooted question, by cases No. 27 and No. 35 of 1906-7. The former was a business man from Ohio coming to Buffalo from a small city where typhoid was prevalent, the latter was a high school boy who had been camping on the lake shore near another small city whose sewage is discharged into the lake and gradually distributed through the water. Not to go into details, both had an initial temperature of about 40 degrees and the general symptomatology of early typhoid. In the latter patient there was some acute catarrh of the trachea and upper bronchial tubes, otherwise there was nothing to explain the symptoms but an enteric infection. Both cases defervesced in three days, after a calomel purge and, in the former case, acetozone, in the latter, salacetol and animal charcoal.

There is nothing remarkable in these two cases and, indeed, no particular reason for taking them as a text rather than a number of similar ones seen at various times during the last eighteen years.

Fifty years ago, or more, there was considerable confusion of typhus and typhoid fevers, as indicated by the nomenclature which to us seems inappropriate, the resemblance not being particularly striking, even from the purely clinical standpoint in which our grandfathers in medicine were supposed to be astute observers. Following the recognition of typhoid as a clinical entity and, especially after typhus had become nearly extinct in this country, the idea prevailed that typhoid could be jugulated by treatment. Although many of the best clinicians denied this possibility, the common talk about breaking up the fever or about the patient's being threatened with typhoid, seems to have represented a widespread professional opinion, held in good faith. Not to mention mere difficulty of diagnosis from malaria, dysentery, cholera and various other febrile affections, professional sentiment of say twenty years ago, held that typhoid had two principal imitators, febricula or ephemeral fever and continued fever. With regard to the former, the differential diagnosis obviously concerned the first week of typhoid while the latter was more or less sharply separated from typhoid of longer duration. It is difficult to say whether or not the idea of the specificity of febricula was held or not, as the nature of the disease was vaguely understood. Continued fever was also a vague conception and so many physicians acknowledged themselves uncertain as to its nature that it is difficult to speak of conflicting theories. However, by the same or different physicians, it was regarded as explicable on one of the following hypotheses: (1) that it was simply atypic typhoid, (2) that it was atypic malaria, (3) that it was a combination of both, (4) that it was an independent and specific infection, (5) that it was, like febricula, a fever due to no definite cause.

It is a little over twenty years since bacteriology began to have a decided influence on the opinions and diagnostic and therapeutic methods of clinicians.

This influence was first felt in regard to the various forms of surgical sepsis, at least by the profession generally. Shortly afterward, the practical diagnostic value of the malarial parasite was realized and while, after its first general recognition, many inexperienced clinicians undoubtedly imagined that particles of dust or even crenations of the red corpuscles or deposited staining material, etc., were malarial parasites, so that malaria was reported with undue frequency, these errors were soon rectified and it was realized that it was rarely that "malaria would jump on and rule" another infectious process, that malaria was an extremely rare disease in most cool and dry localities and its connection with the anopheles was later clearly established.

Not even to-day, is the finding of the typhoid bacillus a practical clinical diagnostic point, the Ehrlich diazo reaction is recognized as very far from pathognomonic and, indeed, hardly of diagnostic importance, and the agglutination reaction, though now on a simple clinical basis by macroscopic means is not absolute and is not available much if any before a fairly typical typhoid is recognizable by clinical signs nor is it much more positive than the latter.

Thus our diagnostic conception of typhoid has been influenced largely by the exclusion of malaria and by induction from bacteriologic data obtained by means not at present feasible in routine practice, even in fairly well equipped hospitals.

Febricula is now generally considered as a misleading term or one to be retained only as a matter of convenience, to indicate a brief fever of undemonstrated origin. The idea that continued fever might be an independent, specific infection, has also been relegated to the past. Rarely a case has been proved to be really a joint incidence of typhoid and malaria, quite frequently, a phase of malaria, but, for the average northern climate in which malaria has been shown to be rare, continued fever is now pretty generally recognized to be atypic typhoid, though occasionally explicable on other grounds, such as concealed surgical sepsis, alimentary sepsis, true inflammatory reaction, possibly, by an oversight, leucocythemia or various other diseases.

In other words, there are many localities in which, barring sepsis, the exanthemata, acute rheumatism, diphtheria, pneumonia, tuberculosis—the forms of miliary infection and with concealed foci affording the greatest diagnostic difficulties—venereal fevers and certain quite rare and characteristic infections, such as tetanus, equinia, cerebrospinal meningitis, etc., typhoid is the only infectious fever at all apt to be encountered.

Thus, granting that the physician has excluded inflammatory conditions of the kidneys, lungs, joints, etc., surgical sepsis, neurotic fever, and that, without indications of localization in some very limited part of the alimentary tract, as the gall bladder and appendix, the patient has a fairly high fever for two or three days, the tentative diagnosis of typhoid is fully justified. Indeed, boards of health rather expect the reporting of cases on such evidence, with subsequent revision of diagnosis if necessary.

At the same time, no positive diagnostic point is yet present. The back ache, malaise, prostration, even nose bleed are not sufficiently characteristic, the

alimentary symptoms are consistent with typhoid or almost anything else, it is too early for the rose spots, the Ehrlich test is not usually present even in cases which subsequently prove to be typhoid, and, if it were, it would not be pathognomonic, and, if carried out with a stale solution or with too great complaisance as to the tint developed, it is utterly valueless. The agglutination test is not yet to be expected, and it would be a hopeless task to seek the typhoid bacillus either in the blood, stools or urine, although it is perfectly possible that an improved technic will obviate this difficulty.

Thus the question as to the nature of ephemeral fevers that start like typhoid still depends for its answer, upon opinion. Now there can be no difference of opinion that the physician who speaks seriously of such patients as "threatened with typhoid" and who talks about "breaking up the fever," is either an ignoramus or a fraud. The patient either has typhoid or he has not, and while we may legitimately give some of the credit for successful and, especially, short cases of typhoid to good nursing, proper feeding and even drugs, we certainly cannot honestly speak of "breaking up typhoid" when the patient defervesces within a week. Of course, some of these brief cases are really typhoid of initial mildness and attracting attention comparatively late. The general opinion, however, is that, with this exception, ephemeral fever resembling typhoid is entirely distinct and is probably in most cases a colon bacillus infection.

While we can scarcely say that such cases have been threatened with typhoid or that they have been therapeutically aborted, it is by no means an absurdity to hold that they are really mild infections with typhoid bacilli, terminating by spontaneous jugulation of the bacilli implanted in the host. I do not commit myself to this opinion but simply state that it does not seem to me essentially absurd.

Considered a priori, we find that various infections differ widely in their fastigium. On the average, rotheln is the infection of shortest course, barring the group of hydrophobia, equinia, etc., which is usually fatal and in which the termination of the disease may be considered as prematurely hastened by death. Leprosy, on the other hand, has the longest duration. Between these extremes of a week or so and many years, we can arrange an overlapping series of fastigia, of increasing average lengths. For any one infection, also, the fastigium may vary considerably though, on the whole, it is of surprisingly definite length. In the case of typhoid, the theoretic four weeks' course may be shortened by 25 per cent. or lengthened by 50 per cent., without considering relapses or unusual cases. I count on securing defervescence in 17 days, in cases seen early, abundantly nourished, and medicated with charcoal and some intestinal antiseptic such as salacetyl or acetozone. Indeed, I consider that the typical case of typhoid is really a mixed infection, in which inadequate nutrition and that of a nature to afford an excellent pabulum for typhoid and normal intestinal bacteria, are important factors in the symptomatology.

If genuine typhoid may be reduced to a fastigium of 17 days or a few less, it seems perfectly reasonable to suppose that there may frequently occur implantations of bacilli not amounting to successful in-

fection, but in which some reactionary fever occurs that may be jugulated within a few days. The usual dissemination of typhoid by water, and the obvious and, indeed, demonstrated fact that the bacilli are distributed so as to form an exceedingly dilute suspension, is significant as indicating that typhoid differs from many infections in requiring the implantation of only an extremely minute colony or, possibly, only a single germ. Still, there is no doubt but that typhoid bacilli must occasionally pass through a non-immune host, without producing the disease. To say that ephemeral fever, resembling typhoid, can never be genuine typhoid, is tantamount to saying that there can be no intermediate degrees between the mere passage of typhoid bacilli through the alimentary canal or their destruction so soon after penetrating the epithelial barrier of the alimentary canal, etc., that no symptoms can arise, and at the opposite extreme, a well marked infection, with recognizable symptoms, agglutination, and multiplication of bacilli to such a degree that they can be found by careful bacteriologic technic. Thus analyzed, the statement that it is absurd to imagine that ephemeral fever resembling typhoid is really typhoid, becomes itself an absurdity. One might just as well say that there can be no septic infection short of a clinical septicæmia.

This subject cannot be left without an allusion to the very excellent work on paratyphoid and the elaborate classification of bacilli of the typhoid and colon groups. Although it has been suggested that atypical clinical typhoid, the old non-malarial continued fever, etc., might be distinguished as para-infectious, Warren Coleman (News, Aug. 19, 1905), in the light of considerable experience by various clinical and bacteriological students, concludes that the differentiation rests purely on bacteriologic identification. He considers that several bacteria may produce clinical symptoms of typhoid in man, though typical attacks have been shown to be due to the genuine typhoid bacillus in about 90 per cent. of cases. For example, Ruediger, Medicine, April, 1903, in 30 clinical cases, found the typhoid bacillus in 20, the paratyphoid bacillus in 2, which did not cause agglutination with typhoid cultures, and in 1 the identification was doubtful. The remainder gave the Widal reaction. Coleman's list of bacteria which may cause symptoms of typhoid is: *B. alkaligenes fecalis*, several paratyphoid and paracolon varieties, various strains of *B. enteritidis*, *B. Psittacosis*, *B. coli communis*. From the standpoint of one who is not a bacteriologist, the classification of paratyphoid and paracolon bacilli is not satisfactory. Clinical results can not be used to discriminate and the general principle that any germ, or for that matter, any organism of whatever size, may vary in form, chemistry, vitality (virulence for germs), etc., is so well established that the comparatively minor differences assigned to separate these organisms, are not very convincing. The discrimination rests mainly upon agglutination tests, but it must be remembered that this entire subject is still in its infancy and, in particular, that in a number of instances, the specificity of agglutination is not absolute. Herbert Fox, Univ. of Pa. Med. Bull., April, 1906, reviews the literature from the first report on paratyphoid infections by Achard and Ben-

saude in 1896, and holds that two general subtypes have been made out, one agglutinating with typhoid cultures. Ascoli, Zeit. für Klin. Med., Vol. 48, page 418, reports a case with the morbid histology of typhoid, the blood serum agglutinating colon bacilli and the patient's own paratyphoid bacillus but not ordinary typhoid cultures, yet the author considers that the bacillus is merely a variety of the typhoid bacillus.

Minor differences in the various studies, also show that no clear cut distinctions can be made in the case of bacilli supposedly intermediate between typhoid and colon bacilli and, for this reason, the mere clinician can not help being inclined toward the sceptic belief that paratyphoid bacilli are probably nothing but strains of typhoid temporarily modified by accidents of environment.

As has been stated, the identity or non-identity of certain cases of ephemeral fever with typhoid, cannot be established by the symptomatology, obviously not by the morbid histology, and agglutination tests really beg the question, since their reliability is not thoroughly proved while, if it were, most of the cases in question defervesce before even genuine typhoid would give a positive agglutination. Thus, the solution of the problem must depend upon the perfection of strictly bacteriologic methods, based on the differential cultures secured from slightly infected intestinal contents, serum, etc.

BIBLIOGRAPHY OF PARATYPHOID.

Clinical pyaemia, due to paratyphoid bacillus. Rudolf Schmidt, Wiener Klin. Woch., Dec. 4, 1902.

Typhoid gangrene rare. Case reported. The cause may be weakened circulation or local lesion, due to venous or arterial thrombi or emboli. C. E. Nammack. Med. Rec. Dec. 27, 1902.

Relation of paratyphoid bacilli to Gilbert's intermediate group between colon and typhoid bacilli. Partial review of literature. Geo. E. McLaughlin Carolina Med. Jour., Aug. 1903.

Paratyphoid due to bacillus intermediate between colon and typhoid. 2 varieties. Review of literature. Beljaeff, Russky Vrach, 1903, No. 201.

Bacteriologic study of 30 cases of clinical typhoid. Typhoid bacilli found in 20 and 2 shown to be paratyphoid, not causing agglutination, even without dilution. 1 doubtful case. Others gave Widal reaction. E. H. Ruediger, Med. Apr. 1903.

Paratyphoid first demonstrated by Achard and Bensaude in 1896. Historic review. 2 types of organisms clearly distinguished, one agglutinating with typhoid serum. Herbert Fox, Univ. of Pa., Med. Bull., April, 1905.

Pseudotyphoid due to colon bacillus, paratyphoid being excluded by agglutination tests. 1 case. Evans and Sadler, Univ. of Pa., Med. Bull., June 1903.

House epidemic of paratyphoid, due to atypic colon bacillus, 6 cases, 1 death. Sion and Negel, Central blatt für Bakt. und Parasit., 1902, Vol. 32, pages 481, 581, and 679.

Differentiation of typhoid, colon and allied bacilli. Philip Hanson Hiss, Jour. of Med. Research, June, 1902.

Case of paracolon infection probably secondary to typhoid. Serum reactions, etc. E. Libman, *ibid.*

Bacilli intermediate between colon and typhoid bacilli. B. X. Buxton, *ibid.*

Paratyphoid produced by several variants, distinguished by agglutination results. V. I. Bielyaef, Roussky Vrach, May 24, 1903.

Typhoid panophthalmitis. 1 case reported. Less than a dozen recorded. W. W. Gilfillan, News, July 25, 1903.

Paratyphoid cannot be differentiated from typhoid except by bacteriologic examination of blood. Of the typhoid-colon group, the following can produce clinical symptoms of typhoid in man: *B. alkaligenes faecalis*, various paratyphoid and paracolon varieties, various strains of *B. enteritidis*, *B. peitacosis*, *B. coli communis*. Warren Coleman, Med. News, Aug. 19, 1905.

Paratyphoid, with morbid histology of typhoid post mortem. No agglutination of typhoid cultures but positive reaction with colon bacilli and the patient's para-bacilli. Opinion that the bacillus is a variety of typhoid bacillus. Ascoli, Zeit. für Klin. Med., Vol. 48, page 418.

PREDISPOSITION TO DISEASE.

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PREDISPOSITION to disease is perfectly understood by physicians; nevertheless it is a thing very difficult to define, and for the reason chiefly that this condition is the resultant of an almost infinite variety of factors. A good working definition, however, would be that "predisposition is a state of the body which renders it liable to be affected by a morbid agent."

I have always remembered how in my student days one of our professors likened the various organs and tissues to an aggregate of machines intimately and essentially interrelated; the harmonious working of the whole depended upon the smooth running of each component; some of these machines being stronger, others weaker. Should any unusual strain be laid upon this combination, the weakest among these would the soonest have to meet the stress and would be the first to become deranged or to break down. Then if the stress were continued, other machines would in turn be put out of gear; or the whole combination would be destroyed. I think the analogy holds well regarding the human body. The circulatory system, the lungs, liver, stomach, kidneys, the mucous membranes, the lymphatics and the like are variously affected (their vulnerability differing with each individual) by etiological factors. And I think it is one of the main secrets of useful and successful practice not only to consider the individual first and his disease afterward, but more than that, to consider the conditions and the relations of the various organs. Only in this way is a wise therapeutics, a wise choice of remedies in a given case possible. We hear much nowadays of the uselessness of drugs; but such a statement bothers no physician who knows in the first place the properties of the drugs he employs, and in the second place, the conditions of the organs and tissues to which he is applying these drugs.

But to revert to our analogy: several persons may equally be exposed to severe cold; for instance, some may be sufficiently robust not to suffer at all; in others the etiological effect of this agency will be to induce bronchitis, or pneumonia, or apoplexy, or cystitis, or acute Bright's, or gout; in each case according to the organ or tissue most easily beset. The power of resisting disease differs markedly in individuals, and oftentimes in a way to surprise us. People of robust build occasionally develop consumption and die of it, while others who are emaciated seem immune to that disease. Slight, thin and apparently frail women exhibit at times astonishing endurance, such as may put to shame others who seem to be lusty and strong. In cases of infectious disease the essential germ usually finds an implantation upon

some tissue as a focus, from which the disease is propagated either by bacterial invasion or by the influence of the toxins evolved. Thus are produced the constitutional symptoms, fever, rapid pulse and the like. The focus may be in the throat, as in diphtheria, or in the intestine as in cholera. The resulting aberrations from health may be slight; or if the tissues be non-resistant, susceptible or "predisposed" the diphtheria toxin, for example, will seriously invade the kidney perenchyma in one case; or in another it may induce a septic pneumonia, in another a purulent otitis. Again, in epidemics of cholera some may escape altogether; some may suffer but lightly with diarrhœa; others will have vomiting, cramps and rice water stools; while in those particularly predisposed, in whom the tissues are especially vulnerable, the disease will develop itself to its full-intensity and will rapidly proceed to a fatal issue.

In the evolution of any infectious disease, then, two factors must always be kept in mind: the germ, the essential factor; and the predisposition, the susceptibility, the lack of resistance in the individual. There is here no more striking example than tuberculosis affords. The Koch bacillus is ubiquitous; it is constantly floating in the atmosphere; everybody has certainly inhaled it in enormous quantities; has no doubt ingested it frequently in his milk, his butter and perhaps also in his meat. Yet the resisting power of most individuals is such that the disease is not contracted by the vast majority.

In my paper on Heredity in the April number of this journal I touched upon anti-natal predisposition; I should here consider "acquired predisposition," although, as we shall see, even here it would be difficult to eliminate the pre-natal factor. By acquired predisposition is meant a depressed condition of the organism, a deterioration of the vital processes resulting from habitual infraction and defiance of the laws of health. Gluttony, for instance, will injure the alimentary canal and make it vulnerable to the typhoid bacillus. The habit of living in overheated rooms and of breathing vitiated air renders the lung parenchyma a congenial nidus for the *diplococcus pneumoniae*. It is when we consider epidemics of infectious disease that acquired predisposition is very distinctly manifested; and under such circumstances it can be expressed with fair definiteness.

The presence in the body of nitrogenous substances in a decomposing or readily decomposing state, affords the best possible pabulum for the nourishment of bacteria and for the development of their toxins. Unwholesome food, bad water and foul air are constant accompaniments of epidemics; and these agencies tend to produce in the blood of the individual attacked an excess of these decomposing, unmetabolized substances, with which the blood current is normally charged to a limited amount, the venous circulation receiving them from the various tissues and carrying them to the excretory organs by which ordinarily they are eliminated and cast forth. If the amount of these effete substances be limited to that which is continually being produced in the ordinary processes of bodily waste, and if the excretory organs (the lungs, kidneys, skin, liver, intestines) all work

properly, the products are abstracted from the venous circulation as fast as they are poured into it; so that the stream does not become overloaded. But if such decomposing substance be either abnormally introduced from without, or if it be generated in abnormal amount within the organism; or if the normal process of elimination be in any way obstructed—under such circumstances a rapid accumulation of them takes place in the blood. Thus are provided not only the pabulum upon which the bacterium may subsist, but also the conditions necessary for its morbid activity. There are some constitutional states which are brought about by abnormal habits of life, particularly when these habits have continued with cumulative force through several generations. These states, when fully established, so thoroughly permeate the organism that perhaps no one function goes on as it would in perfect health. Our professional forbears used to call these constitutional states diatheses, the rheumatic, the arthritic, the alcoholic, the cancerous, the syphilitic, the scrofulous diathesis—implying that heredity was the main factor in their development. This may be so with regard to states of the body; but it is not so with such specific diseases as arise from them. We now know, as our fathers did not know, that the essential causes of infectious diseases are specific germs which do not seem, in general terms, to be transmitted from parent to offspring. We now think of rheumatism, for instance, as a specific infection, the germ being as yet undiscovered; and the most we can say is that this germ finds the individual having the rheumatic diathesis an unusually congenial host. The scrofulous diathesis for instance is not to my mind a tuberculosis, for the simple reason that the tubercle bacillus is generally not transmitted by a consumptive parent; scrofula is a condition of the organisms which makes it very receptive to the invasion of the tubercle bacillus. So we speak now, not of diatheses, but of morbid temperaments or vicious modes of nutrition, such as are incompatible with good health. The main difference after all is only one of nomenclature.

The arthritic temperament is peculiar to people of leisure. It is observed mainly in countries civilized to an advanced degree. It develops under the ever-new, ever-changing conditions imposed by civilization; and it is intensified from generation to generation. Little by little the cerebral faculties become predominant, engaging most of the activity of the individual, so that the nutrition of the rest of the organism declines. Sluggish nutrition thus becomes characteristic of arthritis. Roger, in his most valuable "Introduction to the Study of Medicine," describes the arthritic as being nervous; his flesh firm; he may be dry or lean, or, on the contrary, fat; he is precociously bald; sad in disposition; sometimes remarkably bright in intellect. In youth he has severe headaches; in early manhood he has asthma; later he suffers from bronchitis. At twenty-five he becomes a dyspeptic; the fatty acids resulting from defective metabolism are eliminated by the lungs and the skin, so that an odor somewhat offensive is communicated to the breath and sweat. Various skin eruptions, notably eczema, are manifest. These are disorders of cellular nutrition. Diabetes, gout, uri-

nary or biliary calculi are likely to develop. All this series of disorders, seemingly diverse in character, are nevertheless linked together by the fact that they all originate from the nutritive disturbance which is termed the arthritic temperament.

The child born with the scrofulous temperament is especially susceptible to tubercular infection; the germ itself is rarely transmitted. Struma has arisen because of the condition of the parents at the time of conception; or of the tissues during the antenatal period. Much in point is Roger's case of parents of uncommon strength who had three children. The first-born and the youngest were very well constituted and had inherited the strength of their parents; the second, conceived when his father was convalescent from pneumonia, was poorly developed, remained feeble, and at the age of twelve contracted tuberculosis, from which he died. We all know of cases like this. We must here think of both physical and psychic disorders which may have affected either or both the parents. Such may be fatigue; convalescence after a serious and enervating illness; advanced years of the father at the time of conception; an unfavorable age for procreation, a parent being either too young or too old; great disparity between the ages of the parents, especially if the wife be older than the husband; relative lack of vigor in the husband, as compared with that of the wife; too rapid procreation—harmful both for parent and for offspring; physiological poverty toward the end of sexual life; such concomitant diseases and conditions as the neuroses, syphilis, cancer, great distress and privation; exhaustion or depression affecting the mother during pregnancy; consanguinity—harmful both in itself and as increasing the potency of other factors; causes accidental, or perhaps so slight as to elude notice, or such as may have been merely transitional in the parent. All such causes may induce a vicious nutrition, making the organism of the progeny receptive to infection, tubercular or of any other kind. During the embryonic period, moreover, the cells of the future body become differentiated and the organs are formed; during fetal life these organs increase in size and begin to take on their several functions. Through both those periods, but especially the former (the embryonic) the body in utero is most acutely sensitive to environmental impressions—to variations in oxygen supply, warmth, the chemical constitution of the maternal blood, uterine and placental diseases, and the like. When such influences are markedly abnormal it cannot be hoped otherwise than that the tissues of the offspring will take on a predisposition to disease.

The scrofulous temperament is characterized in childhood by the pallid skin and flabby flesh; there is often blepharitis, which becomes chronic and very difficult to heal; phlyctenulæ are frequent; the nose becomes large and broad and acne-studded. Then develop naso-pharyngeal adenoids and hypertrophied tonsils; so that such children are mouth-breathers starved for oxygen. And too often the children among the very poor who have their upper respiratory passages thus diseased or obstructed develop consumption when they reach adolescence, un-

less these pathological conditions are removed or treated in childhood. For not only do they induce imperfect oxygenation; the tubercle laden excreta from such unhealthy throats are swallowed and give rise to "ingestion" tuberculosis. There are, besides coryza, congested and unhealthy throats and obstinate bronchitis, tedious inflammations of the mucus membranes and of lymphatics generally. Adenitis and periadenitis are persistent; and the glands become enlarged and remain so. The metabolism in general is torpid and sluggish; obviously there is a radical nutritive disturbance. There may be in such a strumous child thoracic malformations, narrow chests (lacking also in depth), projecting shoulder blades, and small respiratory muscles. There is emphysema; the capacity for adequate breathing is below the average. The development of the circulatory system—especially of the aorta—is defective; there are congenital heart lesions; the heart is small. Anemia and chlorosis develop early. The teething is slow, the ossification is deficient; tuberculous joint and bone lesions (white swellings, hip disease, Pott's disease) develop readily; there is stunted growth, defective genital organs.

How does the tubercle bacillus become implanted upon predisposed tissues; and how do lesions result from such implantation. Certainly tuberculosis is, to begin with, a purely local affection. Tissues which were vulnerable to begin with, or which have had their metabolism disturbed by traumatism, vasomotor, functional or other disorders, become foci. The extension of the tubercular process then depends largely upon the spread of the products of the initial tubercle formation by means of the lymphatics and the blood channels.

We have pretty well dropped the idea that pulmonary tuberculosis comes about primarily through the inhalation of the Koch bacillus into the air-vesicles; this seems unlikely because the function of the respiratory tract both anatomically and physiologically is limited to the admission into the alveoli of gaseous substances only; that air is changed in the alveoli not by currents, but by the subtler influence of the law of the diffusion of gases. I need also but remind the reader, without going into elementary physiology, of the division of respired air into tidal, complemental and residual. The main routes by which pulmonary consumption is conveyed seem to be two: by way of the bronchial glands (which first become infected), through the lymphatics to the thoracic duct, the vena cava, the right heart and finally the lung parenchyma; and secondly by way of the alimentary canal (ingestion tuberculosis), the course being the stomach, intestines, lacteals, the thoracic duct, the vena cava, the right heart and the lung, the great respiratory sifter of impurities. The pathologist has, indeed, found very little evidence of primary colonization of the Koch bacillus in the pulmonary parenchyma. There is plenty of evidence of primary tuberculosis of the bronchial glands; but these are not, strictly speaking, parts of the lung parenchyma, the essential features of which are the air vesicles. However, in almost every part of the body, differing in each individual according to his most vulnerable tissue, there

may be a primary tubercular focus—in the lymphatics, in the serous and mucus membranes, the skin, the periosteum, the bones and joints, the intra-abdominal intracranial and reproductive organs, in the nose, throat, ear, tonsils, mastoid and the eye. The place of implantation is not necessarily the point of entry of the bacillus. There may be mesenteric infection, for instance, without any lesion of the intestinal wall to show for it. And there may be tissues which have for years latently harbored colonies of bacilli, without the development of any symptoms until the advent of some acute cause.

Why is the right apex so frequently predisposed to tuberculosis; why are the tissues here so vulnerable to the bacillus. The first rib is frequently immovable, so that alveolar expansion is restricted. Again, a furrow has been found by Schmorl running around the upper aspect of the right apex, which he attributes to defective development of this first rib. The bronchial twigs which supply the neighboring parts of the lung tissue are oftentimes crooked, narrowed or otherwise deformed, so as to favor the persistence of inflammation in the mucus membrane. In children also the inflamed bronchial glands often compress the bronchi and also the branches of the pulmonary artery, which supplies the upper portion of the lung. Thus in the apical region there are apt to be lessened power of expansion, imperfect aeration and insufficient blood supply. The pathology of "taking cold" is suggestive here. Cold will produce contraction of peripheral vessels, with pulmonary anemia, the blood being in most cases driven into the abdominal viscera. Anemic tissues are greatly predisposed to tubercular infection; they present diminished resistance, particularly when the Koch bacillus is the agent. Again the venous blood, bacillus laden, from the thoracic duct, is first carried through the pulmonary circulation for oxidation before being returned to the left heart. The lungs, therefore, bear the brunt of exposure to this infection, and act as a strainer to the general circulation.

The alimentary tract is certainly, and much more intimately than has been supposed, concerned in the spread of tuberculosis throughout the system. In infants and children abdominal tuberculosis is much more frequent than the pulmonary form; not until adolescence do we see the beginning of the dreadful death rate from "consumption of the lungs." As a corollary it must be noted that gastro-intestinal diseases are most prevalent in infancy and childhood; and that there is in those years much improper, or unsuitable, feeding.

I think we are going soon to find out that a great deal of predisposition depends upon abnormal conditions in the ductless glands. Sajons declares, for example, that vulnerability to infection means insufficiency of the adrenal system and lowered oxidation. Such symptoms, in his opinion, as pallor, muscular weakness, a thin, compressible pulse, an undeveloped or slightly dilated heart, anemia, anorexia, coldness of the extremities, habitual hypothermia, point to adrenal insufficiency. We may not agree with him concerning the reason for these symptoms; they certainly do, however, denote an ideal condition predisposing to tubercular infection. Chlorosis, an affec-

tion frequently related to tuberculosis, is referred variously to lesions of the vascular system, to adolescent disturbances, and to digestive disorders; in each of these aspects is a relation logically established. The sugar-containing tissues of the diabetic are particularly inviting to the bacillus.

I do not believe that the predisposing effects of a perverted psychism are sufficiently appreciated by medical men. With regard to tuberculosis, for instance, it is certainly difficult to gauge such influence—to compute the extent to which thought can affect the development of a leucocyte, the making of a drop of lymph, the behavior of an excretory cell. The process is not susceptible of investigation by the microscope, or by laboratory methods. Nevertheless it is essential in tuberculosis as in all other affections, that the influence of the mind over the body be not lost sight of. It is in every one's experience that psychic perturbations derange the functions of the various organs. Why may not acute shock (such as attends traumatism) or chronic shock (such as induces or accompanies nerve exhaustion, or a protracted play of profound emotions) predispose to graver affections. And if my materialistic colleague must have tangible demonstration, let him reflect that the vaso-motor system is an essential part of the machinery by which thought is manifested; that passive congestion from any cause makes a tissue susceptible to tubercular implantation; and that vaso-motor aberrations are the likeliest factor to bring about blood stosis.

Idiosyncrasy is individual predisposition; it is a sensitiveness to particular influences which is wholly anomalous to that usually observed. Such individuals suffer from influences which do not ordinarily affect the majority of human beings; certain chemical substances, certain articles of food or drink which are generally regarded as harmless act upon these unfortunates as poisons. Fresh fruits, strawberries, sugar, salads, asparagus, dishes of liver or kidneys, sea foods, as crawfish or lobster, occasion nausea, colic and vomiting; or their ingestion results in hives or eczema. Boiled milk or cocoa may occasion a most unpleasant indigestion. Alcoholic beverages may even in very small quantities cause marked excitation or profound narcosis. Very minute doses of drugs may bring patients to the point of death. Antiseptic solutions which do not generally affect the skin, may in rare instances occasion even a universal eczema. The production of hay fever, hay asthma and the like by pollens and grasses, during harvest time, is well known.

I fully recognize the fragmentary nature of this paper; however, an extended consideration of predispositions to disease would be impossible in a single article. I hope I have interested my colleagues; if I have, I beg to note that in my three previous papers on Environment, Heredity and the Will, contributed to these columns, I have stated many other predispositions besides those considered in this. The subject is so extensive that volumes might well be devoted to it. Nor is there any of more importance to the physicians, for we cannot have a national therapeutics without an understanding of the conditions which invite disease.

OPERATIVE TREATMENT IN ACUTE APPENDICITIS.*

By Professor J. Rotter,† Chief Surgeon, St. Hedwig's Hospital, Berlin, Germany.

IN contradistinction to Prof. Israel, who has addressed you upon chronic appendicitis, I desire to speak concerning acute appendicitis, and more especially, in regard to the diagnosis of the earliest stage of an acute attack, in its relation to the early operation. By this I mean operation in the first 48, or better, in the first 24 hours.

When we review the appendicitis question as evolved during the past 20 years, and inquire as to what specific degree we have succeeded in reducing the mortality, we must acknowledge, that, with the exception of the most recent time, only the slightest progress was to be recorded. The most favorable statistics exhibited a mortality of 10 per cent., and as we gradually improved the diagnosis and realized that a greater proportion of the cases of paralytic ileus, subphrenic, Douglas and hepatic abscesses were originally induced by appendicitis, the mortality of the disease rose to 12 and even 17 per cent. Notwithstanding the most heroic efforts on the part of the internist and surgeon, the reduction of this mortality rate has not been manifested to any appreciable extent.

In the first weeks of the year 1904 the question of the early operation in appendicitis was inaugurated and its feasibility has been subsequently confirmed by surgeons all over the world. This new principle of prompt operative interference has given me the most brilliant results—results that I had formerly scarcely dared to hope for. In St. Hedwig's Hospital the mortality of the acute cases of appendicitis has been lowered to two per cent. Prof. Israel and many other surgeons have recorded nearly the same result. This question as to the best and most suitable treatment of the acute attack is therefore, for the majority of surgeons, positive—and the internist will very soon become convinced of the correctness of our position—a position of the utmost importance.

As we began in an experimental manner with the early operation we asked, as did many of our colleagues, whether or not, at so early an hour, many erroneous diagnoses were not made, and, consequently whether or not, many healthy appendices were not removed. In this connection the renowned pathologists Orth and Aschoff have happily taught us that the diagnosis of the beginning of an acute attack can, on the whole, be established with almost absolute precision.

My assistants have submitted a review of the histories of the early operations, and out of this "resume" it is made to appear that three times a mistake occurred with acute blennorrhagic, salpingitis, and indeed not by long-standing pyosalpinx but by fresh infection. Twice in these latter cases we had apparently to deal with conditions of typical appendicitis, "anamnese" and high fever, one of which measured 40° celsius. After operation the fever immediately disappeared and did not return. This circumstance ap-

peared to me to offer a proof that the symptoms arising from the appendix had subsided, consequently I was very much astonished over the result of the pathologic-anatomic examination. I believe that we are able to avoid the confusion with acute blennorrhagic salpingitis if we examine carefully all patients without distinction as to their social status. In that manner I have avoided many errors during the past year. Under these conditions I hold myself justified in the affirmation that we are able to establish the early diagnosis of an acute attack with sufficient accuracy.

I shall point out to you the principles of the early diagnosis, principles revealed to us by the clinical picture and substantiated by the operative findings. They have been gradually crystallized into a scheme for the management of our cases in St. Hedwig's Hospital.

In a number of cases—I estimate them 15 per cent. to 20 per cent.—the acute attack begins not with stormy but with very ordinary symptoms, a slight disturbance of the general health and appetite, moderate pain in the right side of the abdomen, or indefinitely localized abdominal pain as in a mild indigestion. Adults pursue the even tenor of their way, but children are not so frisky as usual, desire to retire early, etc. Relatives do not consider them ill but a more thorough examination by the physician reveals an unusual tenderness over the appendix. After 12 to 48 hours this preliminary state—as it is called by us—gradually or suddenly develops into a stormy, classical, acute attack. But the symptoms may also recede. In the latter case it will be subsequently difficult to assert that this so-called "indigestion" proceeded from an appendicitis if a diseased "pressure pain" had not been demonstrated. This preliminary state is of the greatest importance if it represents the commencement of a regular acute attack—as regards the practice of the early operation. In my original statistics I have not included this preliminary state in the course of the affection proper, but have reckoned the beginning of the disease from the appearance of the first severe abdominal pain. So it has come to pass that in the first series of early operations—65 cases—concerning which I had spoken in the 1904 and 1905 winter reunion of Berlin Surgeons I had a mortality of 10 per cent. to register. Including the patients over 70 years of age, the mortality reached 13 per cent. In the meantime I was taught by the operative findings that in the so-called preliminary state, the appendix had already undergone severe structural changes, consequently we have later added the interval of the preliminary state to the course of the attack, and since that time 149 more cases have been operated with only three deaths—a mortality of two per cent. From the early operations were excluded patients in extreme old age—over 60—and secondly such patients upon whom, on account of other afflictions, and abdominal incision, per se, would have been hazardous.

The classical attack begins suddenly, with alarming symptoms.

The subjective are: 1st. A most severe disturbance of the general health. 2nd. Loss of appetite. 3rd. "Peritoneal sensation," as I might term it—an overwhelming sensation of wretchedness coming out of the abdomen, and generally accompanied by nausea and

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†Prof. J. von Bergmann, late surgeon to his Excellency the Kaiser, credited Prof. Rotter, who has performed many thousands of appendicitis operations, with having the lowest mortality rate in the German Empire.

vomiting. 4th. Pain. This is the most prominent symptom and dominates the entire clinical picture of this much-discussed malady. In light cases, especially, it is located on the right side, or with predilection, in the region of the stomach, hypochondrium, neighborhood of the navel, or, indefinitely, over the entire abdomen. These subjective complaints do not suffice for establishing the diagnosis of acute appendicitis, because they may exist if only a gastro-enterocolitis is present.

In order to make a definite diagnosis of acute appendicitis we must demonstrate the presence of the objective symptoms. The cardinal one is the diseased "pressure pain" in the region of McBurney's Point, or somewhat higher towards the loin-region, or somewhat lower towards the right Poupart's ligament. In the early hours of the attack, this pain is of the greatest importance, for it is the chief manifestation of the acute disease. In consideration of its importance the physician should determine its presence with the utmost caution. One begins best, not with the right, but with the left lower abdominal quadrant. Tenderly and gradually the fingers go deeper with each succeeding inspiration until the concavity of the left ilium can be touched. At such an early stage of the attack—say in the first 12 or 18 hours—there is no muscle tension present on the left side. During the painless palpation the patient loses his anxiety, learns to relax the abdominal muscles, and, above all, knows and appreciates which pain is caused by severe pressure upon healthy organs, in contradistinction to the "diseased pain" which the pressure over an inflamed appendix awakens.

One palpates the now reassured patient on the left side above, then in the epigastrium, then in the upper right quadrant, over the symphysis, and finally in the ileo-cecal region. By this manner of examination the patient will nearly always be able to give trustworthy statements concerning the pressure pain, enabling the surgeon to determine whether a "diseased pain" is present, or whether the pain exists conditional upon severe pressure over healthy organs. If one can press sufficiently deep on the right side as to touch the iliac concavity, without producing more pain than on the left lower quadrant, then the surgeon is not justified in making the diagnosis of acute appendicitis. Under these conditions he may wait patiently, and, after twelve hours, repeat the examination. But if a "diseased pressure pain" in the ileo-cecal region can be definitely determined, then, on this evidence in conjunction with the subjective symptoms, is the diagnosis of acute appendicitis assured and the operation to be recommended.

There is another series of symptoms, which when they are present, favor and certify the diagnosis.

First comes elevation of temperature. If a patient measures, in the morning, per axilla, 37.2 Celsus, or in the evening, 37.5, an inflammatory process probably exists. 2nd. One frequently finds "Psoas Pain" elicited by muscular movements associated with rotation of the femur in the acetabulum. 3rd. Muscular tension of the lower abdominal wall, which tension manifests itself in a somewhat advanced state—that means if the parietal peritoneum in the neighborhood of the appendix is inflamed. In such a state is the "pressure pain" also strongly pronounced. The above descrip-

tion of acute appendicitis refers to a light attack.

But acute appendicitis can from the very first appear as a severe condition, under the guise of a fulminating, perforating peritonitis. Then is the diagnosis made with scarcely any difficulty. All the heretofore described symptoms are more severely accentuated. The "pressure pain" becomes intensified. It does not confine itself to the ileo-cecal region, but involves mostly the entire lower right side of the abdomen. In this manner we know that the inflammation has involved the peritoneum—that a diffuse peritonitis has begun. In the peritoneal cavity the operator finds a free exudate, and indeed mostly of a cloudy serous fluid, and, at this juncture, dysuria and acceleration of pulse may appear.

If the "pressure pain" has extended itself quite to the left side, and over to the left Poupart's ligament, this symptom indicates that a great collection of free, cloudy or purulent exudate is present in Douglas' cul-de-sac. I shall remark here that a free exudate in Douglas' sac, can, in no manner, be determined through digital rectal palpation. Free exudate in the sac allows itself to be known only through puncture. Douglas pus formation can be diagnosed, per rectal digital examination, only as soon as "walling off" has taken place. This means that a Douglas abscess has resulted, which, in consequence of the increased internal pressure, pushes forward the anterior rectal wall. However, such a "walling off" is developed, at the earliest, on the third or fourth day.

As to the pulse rate there is no great importance to be attributed to it in the first 48 hours. Primarily we must consider the influence of temperature upon the patient. Certainly one must remember that frequently a severe inflammation of the appendix may be present without any change in the pulse rate. When, however, associated with signs of peritoneal irritation, with or without high fever, the pulse becomes markedly accelerated—100 to 110—then the symptoms indicate a severe attack.

As a last symptom may be mentioned that of distension of the abdomen—the tympany heretofore spoken of—which is always to be considered as a sign of extending infection of the peritoneal cavity.

Distension from opium must naturally be excluded. This tympany arises through a beginning paresis of the intestines, and the surgeon who waits for the appearance of this symptom before operating will assuredly have many sins of omission with which to reproach himself.

In the confirmation of the diagnosis it would certainly be superfluous for me to mention the classical alterations in the blood, etc., with which you are all familiar.

With this scheme we have with our material in St. Hedwig's Hospital established the early diagnosis of acute appendicitis, and, as above explained—except in a few cases—corroborated the rightness of our diagnosis through the operative findings.

In conclusion I desire to state that we have succeeded in diagnosing in 70 to 80 per cent. of the cases as to whether we had to do or not with a mild or severe attack of the disease. However, in the remaining 20 to 30 per cent. we were astonished after opening the abdomen—since either a light clinical picture was present, and through the operation a se-

vere pathologic-anatomic discovery was made—or vice-versa.

Therefore as in a relatively large per cent. of the cases we are unable to judge of the gravity of the situation by the clinical picture, I am of the conviction, which was almost unanimously expressed by the 1904 Summer Congress of Berlin Surgeons, that, in order not to lose any of our patients through a delayed operation, we should be compelled to operate upon all of them—the clinically severe as well as the clinically light cases.

Prof. J. von Bergmann, late surgeon to his Excellency the Kaiser, credited Prof. Rotter, who has performed many thousands of appendicitis operations, with having the lowest mortality rate in the German Empire.

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HEAT THE ULTIMATE.

BY F. B. BRUBAKER, M.D.

PART II.

IF we care to remember that all phenomena as we find it expressed in organic nature is dependent upon a series of atomic and molecular motions, and if at the same time we bring to mind the fact that there is no element found in organic being which is not primarily derived from the rocks, the water, and the air, it must therefore follow as a still more natural correlary, that life from the material standpoint is but a consequence of these inorganic principles, whose ultimate again is heat, and heat being inherent in matter itself, necessarily becomes the ultimate life principle, into which all other force resolves itself, as the ebbing of heat motion takes place and death is approached. But a condition of absolute cold being impossible, the dead body still retains heat and therefore motion, and this corresponds in most instances to the degree of its surrounding medium. One would be rash, indeed, to attempt a refutation of the theory here propounded and expect to remain a physicist.

At whatever height we examine into the subject and by whatever path we approach it, we in the ultimate arrive at heat. Thus the *Cerasus Virginiana* grows in the southern states of North America as a noble tree, attaining one hundred feet in height; in the sandy plains of the Saskatchewan, it does not exceed twenty feet; and at its northern limit, the Great Slave Lake, in latitude 62 degrees, it is reduced to a shrub of five feet.

But you will say that this is not wholly to be ascribed to the difference in temperature, that moisture, soil, etc., have an undoubted influence on all life. But this is not all, for Mr. Knight has shown the curious effect of heat in its influence on the sexes of certain Monocious flowers, he mentions that cucumber and melon plants will produce none but male or stamiferous flowers if their vegetation be accelerated by heat, and all female or pistilliferous, if its progress be retarded by cold.

Again the varieties of form and organization manifest themselves more in proportion as we pass from the Polar Seas towards the Equator. Thus on the

coast of Norway, where there is frequently a vast multitude of individuals of the same species, the number of species is very small, but the latter increases rapidly as we go southwards. The number of species of Crustacea of the two highest orders known to exist on the coast of Norway and in the neighboring seas is only 16, but 82 are known to be the inhabitants of the western shores of Britain, France, Spain and Portugal, 114 being known in the Mediterranean and 202 in the Indian Ocean.

But this is not all, for the form and organization is likewise found to differ and become more characteristic in the warm regions of the globe. The number of natural groups which we find represented in the Polar and temperate regions is much smaller than that of which we find types or examples in the tropical seas. In the class of hibernating animals a varying degree of inactivity is found. There are some, as in the *Lagomys*, in which this state appears to differ but little from ordinary sleep; these animals retire into situations which favor the retention of their warmth, and they occasionally wake up, and apply themselves to some of the store of food, which they have provided in the autumn. In other cases, a great accumulation of fat takes place within the body and this serves to maintain the temperature for a sufficient length of time, not indeed to the usual standard but to one not far below it. The state of torpor in these animals is more profound than that of deep sleep, but it is not such as to prevent them from being easily aroused, and their respiratory movements, though diminished in frequency, are still performed with regularity. But in the *Marmot*, and in animals which, like it, hibernate completely, the temperature of the body (owing to the want of internal power to generate heat) and the general vital activity, are proportionately depressed, the respiratory movements fall from 500 to 14 per hour, the pulse sinks from 150 to 15 beats per minute, the state of torpidity is so profound that the animal is with difficulty aroused from it, and the heat of the body is almost entirely dependent upon the temperature of the surrounding air, not being usually more than a degree or two above it.

Now the condition of a hibernating animal closely resembles that of a cold-blooded animal, in regard to the dependence of its bodily temperature upon external conditions, and we find among these, considerable diversities as to the power of generating heat within themselves, and of thus rendering themselves independent of external variations. Thus among reptiles, it appears that there are some which can sustain a temperature several degrees above that of the atmosphere, especially when the latter is sinking, and among fishes it is certain that there are some species which are almost entitled to the name of warm-blooded animals. The greatest power of developing heat in cold-blooded animals appears to exist when their bodies are reduced nearly to the freezing point, and when that of the surrounding air or water is much below it. Thus frogs have been found alive in the midst of ice whose temperature was as low as 9 degrees, the heat of their own bodies being 33 degrees.

In the larva state of insects, the temperature of the

animal follows closely that of the surrounding air as in the cold-blooded classes generally. In the pupa condition, which is one of absolute rest, in all insects that undergo a complete metamorphosis, the temperature scarcely rises above that of the surrounding medium, except nearly at the close of the period, when it is about to burst its envelopes and come forth a perfect insect. The elevation which different insects present, varies in part according to rest or activity, but the same principle is evidently operating in both cases, since the variation existing in different species, in regard to their heat producing power, is closely connected with the amount of activity natural to them. The highest amount is to be found in the industrious hive bee and its allies, and in the elegant and sportive butterflies, which are almost constantly on the wing in search of food. Next to these come the beetles of active flight, and lastly those that seldom or never raise themselves upon the wing, but pursue their labors on the ground. The temperature of individual bees has been found to be about 4 degrees above that of the atmosphere, when they are in a state of repose, but it rises to 10 or 15 degrees when they are excited to activity. When they are aggregated together in clusters, however, the temperature which they possess is often as much as 40 degrees above that of the atmosphere, and when reduced to torpidity by cold, they still generate heat enough to keep them from being frozen, unless the cold be very severe. They may be aroused by moderate excitement to a state of activity, in which the increased temperature rises to a very considerable height. Now although the increased production of heat is in these cases as in hibernating animals, similarly aroused, the consequence of the increased activity is never in question, since we find that, if the temperature of the body be again reduced by cold, the activity cannot be long maintained. Again, the rate at which the formative processes and time of emersion of insect larvæ from their eggs, is entirely dependent upon the temperature. In the case of the bird we find that, if the temperature be not sufficient to develop the egg, chemical changes soon take place, which involve the loss of its vitality, or if the temperature be reduced so low as to prevent the occurrence of these changes, the loss of heat is in itself sufficiently destructive to end life. But this is not the case in regard to the eggs of cold-blooded animals in general, for, like the beings they are destined to produce, they may be reduced to a state of complete inaction by a depression of the external temperature, while a slight elevation renews their vital operations, at a rate corresponding to the warmth supplied. Hence the production of larvæ from the eggs of insects may be accelerated or retarded at pleasure.

We sometimes find special provisions for imparting to the eggs a temperature beyond that which is natural to the bodies of the parents. It has been shown that in serpents, the temperature of the posterior part of the body rises considerably, when the eggs are lying in the oviduct, preparatory to being discharged, evidencing a special heat producing power in the surrounding parts at this period, which is obviously for the purpose of aiding the maturity of the eggs. The viper, whose eggs are frequently

hatched in the maternal oviduct, so that the young are brought forth alive, is occasionally seen basking in the sun in such a position as to receive its strongest heat on the parts that cover the oviduct. Certain birds likewise have recourse to substitutes for the usual method of incubation. The Tallegalla of New Holland is directed by its remarkable instinct, not to sit upon its eggs, but to bring them to maturity by depositing them in a sort of hot bed which it constructs of decaying vegetable matter. The ostrich is believed to sit upon its eggs, when the temperature falls below a certain standard, but to leave them to the influence of the solar heat when this is sufficient to bring them to maturity, and this statement derives confirmation from a similar fact which may be observed in a fly-catcher, the bird quitting its eggs when the temperature is high, and resuming its place when it falls. In all these cases, as in many more which might be enumerated, we observe the influence of an elevated temperature upon the processes of development; and the provisions made by nature, in the physical or mental constitution of animals, for affording that influence. The development of heat around the oviduct of a serpent is a process over which the individual has no control, being entirely dependent upon certain organic changes, while the imparting of warmth to its eggs by the bird, either by its own body or through artificial means is committed to the guidance of its instinct, and the same instinct leads it to suspend the process when it is not necessary.

Phenomena of an equally interesting character may be observed in the history of the pupa state of insects; which, in those that undergo a complete metamorphosis, may be almost characterized as a re-entrance into the egg. In fact, we shall obtain the most correct idea of the nature of that metamorphosis, by considering the larva as an embryo, which comes forth from the egg in a very early and undeveloped condition, for the sake of obtaining materials for its continued development, which the egg does not supply in sufficient amount. When these have been digested and stored up in the body, the animal becomes completely inactive, so far as regards its external manifestations of life, and it forms some kind of envelope for its protection, which may be compared to the shell or horny covering of the egg. Within these are gradually developed the wings, legs and other parts which are peculiar to the perfect insect, while even those organs, which it possesses in common with the larva, are for the most part completely altered in character. When this process of development is completed, the insect emerges from its pupa case, just as the bird comes forth from the egg. Then only does its insect life begin. Its previous condition has been that of a worm, and the alteration of its character is just as evident in its instinctive propensities, as it is in its locomotive and sensorial powers.

Now this process of development is remarkably influenced by external temperature being accelerated by genial warmth, and retarded by cold. There are many larvæ which naturally pass into the pupa state during the autumn, remain in it during the entire winter, and emerge as perfect insects with the re-

turn of spring. It was first found by Reaumur that pupa, which would not naturally have been disclosed until May, might be caused to undergo their metamorphosis during the depth of winter, by the influence of artificial heat, while on the other hand their change might be delayed a whole year beyond its usual time, by the prolonged influence of a cold atmosphere.

In order to hasten the development of the pupa of the social bees, a very curious provision is made. There is a certain set, to which the name of nurse bees has been given whose duty it is to cluster over the cells in which the nymphs or pupa are lying and to communicate the heat to them, which is developed by the energetic movements of their own bodies, and especially by respiratory actions of extreme rapidity. The nurse bees begin to crowd upon the cells of the nymphs, about ten or twelve hours before these last come forth as perfect bees. The incubation is very assiduously persevered in during this period by the nurse bees, for when one quits the cell another takes its place, and the rapidity of the respiratory movements increase, until they rise to 130 per minute, so as to generate the greatest amount of heat just before the young bees are liberated from the combs. In searching for the conditions, on which the production of heat within the animal body is dependent, it is very important to bear in mind that a similar generation of heat may be observed in the vegetable kingdom. It appears from the most recent as well from experiments of similar character made a half century ago, that all living plants are somewhat warmer than similar dead plants exposed to the same atmosphere; and that the elevation is the greatest in the leaves and young stems, in which the most active vital changes are taking place. But the most decided production of heat occurs in the flowering of certain plants, which have large fleshy receptacles, on which a great number of blossoms are crowded. Again in the germination of seeds, as in the process of malting, heat is not dissipated as fast as it is generated, consequently the thermometer shows a marked increase.

We have found in the preceding essay that nutrition is the aim and end of all organic phenomena, that is, that there exists nothing from a physical standpoint which surmounts it. We likewise learned that its presence is life, and its absence death, no matter whether this be imperfect or absent in a part of any organism, or in its entirety. The presence of this all important process, nutrition, is found upon investigation not to differ in any material respect from the physical forces continually at work outside the organic body.

Thus it is evident that the chemical changes, which are involved in the operations of nutrition, are capable of setting free a large amount of heat, which, as in vegetable structure, is ordinarily dissipated from the vegetating surface too speedily to manifest itself, but becomes sensible enough, when this rapid loss is checked. If we further examine into the nature of the chemical changes which appear most concerned in this elevation of temperature, we find that they uniformly consist in the combination of the carbon of the plant with the oxygen of the atmos-

phere, so that a large quantity of carbonic acid is formed and set free, precisely as in the respiration of animals, but this process is slowly performed in the ordinary growth of plants, as if by the converse change, viz., the fixation of carbon from the carbonic acid of the atmosphere under the influence of light. But it takes place with extraordinary energy during flowering and germination. The measure of the heat generated being in close relation with the amount of carbonic acid set free, for if the formation of the latter be prevented, by placing the flower or seed in nitrogen or hydrogen, no elevation of temperature takes place. If the process be stimulated by pure oxygen, so that a larger quantity of carbonic acid is evolved, the elevation of temperature is increased and more rapid than usual. Upon examining into the conditions under which heat is generated in the animal body, we find them essentially the same. Wherever the temperature is maintained at a regular standard, so as to be independent of variations in the warmth of the surrounding medium, we find a provision for exposing the blood most freely to the influence of oxygen, and for extricating its carbonic acid; thus in birds and mammals, the blood is distributed, in a minute capillary network, on the walls of the pulmonary air cells, the gaseous contents of which are continually renewed; and in insects, the air is carried into every part of the body by the ramifying tracheæ. To the sum total of the chemical changes, and to the vital activities of the animal economy, which may increase this change, we ascribe the general heat production of the body, and yet we constantly find a proportion between the amount of heat evolved, and that of the carbonic acid generated, thus being peculiarly evident in insects, whose respiration and calorification vary so remarkably.

The sources of the carbonic acid thrown off by the lungs is partly derived from the metamorphosis of the tissues. It appears, however, from various experiments, that the whole quantity of heat generated by an animal in a given time, is greater than that which would be evolved by the combustion of the carbon included in the carbonic evolved in the same time. Hence it is evident that other chemical processes occurring within the body are concerned in the maintenance of the temperature. It is probable that some of the hydrogen of the food may be burned off by union with the oxygen of the atmosphere, so as to form part of the water which is exhaled by the lungs. Again, the sulphur and phosphorus of the food are converted, by oxygenation, into sulphuric and phosphoric acids, in which process, heat must be generated. In the composition of urea, moreover, oxygen is present in much larger proportion than it is in the protein compounds by the metamorphosis of which it is formed, so that in its production, too, heat will be generated. In fact it may be stated as a general truth, that the whole excess of the oxygen absorbed over that which is contained in the carbonic acid exhaled, must be applied to purposes in the laboratory of the system, in which heat will be disengaged.

Nutrient matter taken within the cell and effete matter ejected, in short, the metabolism of the cell is after all vascularity. Strictly speaking, of course,

there is nothing to which vascularity portends but nutrition, and this, as we have before seen, is life. Now the sum total of the physical forces operating without the body are in no wise different from those operating within the body, and as the ultimate of all forces operating without the body is heat, so likewise the ultimate of all forces operating within the body is heat, else how can they be the same. We do not consider the electron as sufficiently proved to lend it place in our ultimate deductions. True it is that electricity plays some part in all chemical phenomena, and is in constant though imperceptible operation, but no manifestation of it takes place so long as it is uniformly diffused, or in a state of equilibrium, but in proportion as this equilibrium is disturbed by a change in the electric condition of one body which is prevented by its partial or complete insulation from communicating itself to others, in that proportion is a force produced which exerts itself in various ways according to its degree. If electricity were a force tending at all times as is heat within certain limits to more and more life-giving power to the organism, that is, if a certain degree of its absence or, if you please its presence, had been proved to be fatal to organic being, barring of course its direct contact, for any force may produce death if sufficiently intense, we might perhaps give greater place to its importance with organic bodies, but in the metamorphosis of tissue, electricity has been proven not to be constructive even within those atmospheric variations which living beings undergo constantly and are able to withstand. On the other hand it has been shown to be actually destructive, because it leads its powers to the process of decomposition, aiding the same rather than producing new combinations. Thus it has been shown that pieces of meat that have been electrified, pass much more rapidly into decomposition than similar pieces placed under the same circumstances, but not electrified, and in like manner, the bodies of animals that have been killed by electric shocks have been observed to putrify much more rapidly than those of similar animals killed by injury to the brain. Again the souring of milk is of such common occurrence during electric storms as to require no comment.

In a former essay we spoke of a mule being taken under ground and kept there for a period of years, at which time we set aside light stimulus as a necessary one to continued life, and in this same list we would now place electricity, believing that at no time does it mean anything more or less than an interchange of physical force, whose presence is or is not, according to circumstances, and whose complete absence if such could be the case, is never detrimental to continued life, as heat is, in the ultimate.

We have spoken of vascularity, under which let me repeat, we place the systole and diastole of all fluid motion within the body, as the ultimate, actual, measurable, motion, of physical force therein, and if we look external to the body we find this not to differ in any respect the one from the other, for internally as in the external universe, we have friction, compression, etc.; therefore the mere physicist has already grasped the ultimate idea, whether he please to call it atom and molecule, or electron.

Were it necessary we might pause to tell how dif-

ferences of conductivity of heat is found to play along different planes of crystals and how therefore crystals of different formation floating in the vascular stream by the salts necessary to special tissue formation carry to these same cells differences of chemical activity and therefore differences of heat, we might say for instance, that the blood going to the kidney has an activity of 1, while that going to the stomach has an activity of 2, as regards heat; we might also tell how the motion of heat interferes with that of electricity, or how agitation assists in freezing a liquid, but these facts require no elucidation save as they show how one part of the vegetable or animal may be, and is, of differing temperatures. Let us therefore recognize the utter futility of any attempt which has for its final aim the divorcing of physical from vital force. The vital force which gives to all created things their individual impetus.

Thus we arrive at a simple potential entity exercising its energy with dynamic force. A singular dynamic force coping with an ever ready potentiality, and the result arrived at in either statement of the facts, is solar radiation.

We have found upon examination that these forces remain the same, although differently compounded, whether without or within the body.

Let us now take a step forward to man and ask what have these to do within his animal economy?

I have pointed out that nutrition is the aim and end of all organic phenomena, and I now affirm that nutrition in the final is heat.

If disease is always a disturbance of nutrition, to which conclusion we are of necessity led, and if disease is possible by one of two processes only, viz., by arising from within the body, being structural, or arising from without the body, being microbic, or from other extraneous matter introduced, and if vascularity is only and always nutritional, and if nutrition is but the unlocking of so many heat units in each individual cell, it therefore arises that the measure of all these physical forces combined and acting in perfect equilibrium, is health, and as we have found that each and every organ or part requires its own distinctive nutritional elements which represent varying heat units, it must therefore of necessity follow that any departure therefrom which disturbs or alters this equilibrium is disease. Therapeutically, then, we can act on vascularity or nutrition (and this as we have before said is the whole of physical phenomena) in but one of two ways, viz., by contracting the vessel or by dilating it. In the first instance we send less blood to an organ or part, and in the latter instance more—in the former case we subtract heat, and in the latter case we add heat, and this is the whole of therapeutic phenomena.

Tuberculosis of the Kidney.—C. J. Symonds (Lancet, March 28, 1908) believes that early removal of the affected organ is indicated as soon as the destructive process has been localized. The best guide to nephrectomy in the absence of a renal tumor or profuse pyuria is the cystoscope; when the orifice of the ureter shows characteristic changes renal disease is beyond recovery and the organ had best be removed as soon as possible.

Society Proceedings.—Our attention is occasionally called to the problem of the disposition of papers read before societies, by the receipt of bound volumes of transactions containing excellent material which, we feel sure, is not accessible to more than a small portion of the profession. Personal experience emphasizes the belief that a great deal of valuable material is buried in such proceedings and that there is need of a reform in this matter.

The methods of different societies differ considerably. Some compel, others expect, the sole publication of papers in bound volumes issued by the society itself; others similarly limit the publication to a special journal, either conducted by the society or representing some locality corresponding to the membership, or securing in some way the contract of exclusive publication. Other organizations allow joint publication in their own and in any other periodical that the author may select and still others make no attempt to collect the materials presented to them. One of the most economic and sensible plans, but obviously available only for small and relatively select societies, is that of the American Gastro-enterologic Association, which allows its readers perfect freedom of publication, but insists on the furnishing of reprints in the rough, which are bound in a small volume for circulation among the members and certain reviewing journals and libraries. The only objection to this plan is the minor one that the bound volume is somewhat irregular in type, size of column, quality of paper, etc. It would, of course, involve considerable expense to secure reprints for a society of large membership and it would also be impossible for all readers before such societies, unless their papers were vied in advance so as to secure an exceptional degree of excellence, to arrange for their publication in suitable journals and sufficiently promptly.

This subject must be considered from the standpoint of the society, the individual reader, member or guest, and the reading and studying medical public.

The publication of a bound volume of proceedings is a heavy expense to any society, and ultimately, to its members. Our impression is that, excepting for societies dealing with some special branch of medicine and restricting its membership to men of considerable attainments and maintaining a high standard in its programs, the proceedings are not worth to the members what they ultimately cost. Naturally, the relative cost is much greater for a small than for a large edition and yet the average means of societies of large membership are disproportionately small, so that the members of small, select societies, can better afford this luxury than those of larger ones of more general scope. The same applies also to the publication of a special society journal.

The restriction of publication sometimes deters a member from presenting his best work to the society or tempts him to a violation of rules. Guests of the society are, at the same time, less amenable to discipline and more subject to embarrassment in this regard. For instance—and this is by no means an imaginary case—a man of some reputation is invited to read a paper before a local society, of whose rules he receives no definite information. The honor of the invitation places him under obligations to the society and he may further be obligated by entertainment,

payment of traveling expenses, etc. Yet there may be good reasons why he wishes to present the same paper before another society equally insistent on exclusive publication rights or to publish it in some particular journal—perhaps on account of a previous promise. Whatever way the matter is decided, embarrassment and sacrifice are entailed. Sometimes a society of considerable attendance and acumen insists on publication in a medium absurdly inadequate in circulation or unfitted to the particular paper in question.

The ultimate result of all such limitation of publication is to hamper the free choice of subject, to lead to the presentation of papers lacking in originality, and to cumber medical literature with rehashed articles.

For the physician who wishes earnestly to keep in touch with current literature, to prepare complete bibliographies and to do justice to himself and give due credit to authors, the multiplication of magazines and annuals, entails great expense both of time and of money, neither of which are usually abundant with either the practitioner or the scientific student.

Every journal, whether its avowed policy is limitation of field or general medical science and art, gradually establishes precedents as to the nature of the papers to be expected in its columns. Moreover, those periodicals which are avowedly engaged in reviewing contemporary literature provide for the wide publicity of any really valuable paper published in any standard journal, but they obviously cannot embrace all of the medical publications of the country and their space would be taxed beyond endurance if the attempt were made to review the great mass of literature appearing in bound volumes, unless—as indeed is often the case—the majority of the articles in the latter are such as to condemn their publication as a waste of money and a misdirection of energy.

The reporting of society proceedings as a matter of news, by unofficial journals, whether secured by reporters employed by the journals themselves or by appeal to authors for original abstracts, is both expensive and inadequate and it also leads to considerable friction with the management of the societies.

A society of large membership, diversified interests and extensive programs, naturally covers a range of subjects too heterogeneous to render the bound volume of proceedings sufficiently systematic to have much value. Excepting in the case of the American Medical Association, it is not feasible to furnish proper facilities for publicity in any society organ—even that of a state society. A select and specialized society may and usually does provide a mass of material sufficiently homogeneous to be of great value in a bound volume or in a special magazine which can subsequently be bound or otherwise preserved for reference but, unfortunately, such publication is, on the whole, available only for the members who have already heard the papers and it does not adequately provide for the needs of the medical public.

Joint publication in the society organ and in some other journal partially solves the problem but has many objectionable features, is often impracticable and is contrary to the rule necessarily adhered to with greater or less insistence, that an article must be published as original in only one journal.

All things considered, we incline to the opinion that

only the American Medical Association should publish an official journal, possible exceptions being large organizations confining their attention to rather wide fields of medicine, surgery, gynaecology, ophthalmology, etc. In this way, the bulk of literature would be materially reduced and the work of reviewers and students enormously diminished. Small societies of special scope would do well to follow the custom already mentioned of the American Gastro-enterologic Association, a custom which could be rendered more feasible by co-operation of medical journals to secure uniformity of make-up, which would also facilitate the labor in public and private libraries. Large societies of wide scope would do well to accumulate transactions in the form of minutes, in scrap books or typewritten or mimeographed or specially reprinted volumes, for consultation. Such full minutes need not and, indeed, should not be limited to a single copy, but the labor and expense of preparation could be materially reduced by abandoning the attempt to provide every member with a copy, limiting the distribution to certain libraries where they could be consulted as necessary for historic purposes or to refer students to more generally available sales of periodical literature. This plan would be economic in every sense and would afford the advantage of perfect freedom as to publication subject to editorial estimate of value, which is usually fair. Special provision could be made for the filing in minutes of copies of papers not deemed worthy of publication.

The Commoner Diseases of the Skin.—E. L. Cocks (*Med. Rec.*, March 28, '08) finds that while in dispensary practice scabies and pediculosis are readily recognized, in private work no other group of cases is so often wrongly diagnosed. In *scabies* the multifiform lesions resulting from scratching may obscure the real affection. We examine carefully between the fingers and about the wrists for the furrows, the nipples in the female, the penis in the male, in babies the papulopustular eruption of the heels and the soles. We can demonstrate the acarus by introducing the point of a fountain pen into one of the burrows. The ink will follow in the wake of the parasite, and if a needle be pushed to the bottom of the canal and slowly withdrawn the acarus may be found on its point. *Pediculi corporis* feed on the body, simply utilizing the clothing for a lodging place; the diagnosis is established by their presence and by the long scratch marks on the shoulders, loins and buttocks, the numerous denudations of a central small blood clot, and the "maculae ceruleae," due to the minute hemorrhages resulting from the bite. The *pediculis pubis*, or *crab louse*, is found in the hairy parts of the trunk, especially in the pubes or axilla; a careful examination will discover the pest and the nits. *Erythema annulare* (a subdivision of erythema multififormis), pityriasis maculata and circinata and a circinati syphilide have been wrongly diagnosed as ringworm (*tinea circinata*). *Erythema annulare* is generally preceded by pain in the head, back and limbs. There is a temperature of 100 degrees to 104 degrees, and probably gastric disturbance. The lesions appear as rings, from a dime to a dollar in size, with a clear erythematous center. The border is raised; is perceptible to the touch and eye and is not scaly. The sensation is more of burning than itching. Here as in pityriasis maculata and circinata and in most other

cutaneous diseases, new lesions which will aid in diagnosis are always to be found. A *circinate syphilide* is made up of individual papules arranged in semi-circles or complete rings; these may touch or overlap. Between them there is a well-defined induration and a slight redness, which completes the ring. The neck and face are the favorite sites for this lesion. The rings of ringworm, on the other hand, are never broken; they do not overlap and are always scaly and itchy; this lesion begins as a papule, soon becomes scaly, enlarges at the periphery, clear up in the center. The rings never coalesce or even touch. Pruritus is present, though not marked; a burning sensation is never complained of. The application of tincture of iodine and other drugs set up a dermatitis; and may obscure the diagnosis. *Tinea tonsurans* (ringworm of the scalp) and alopecia areata generally presents circular lesions. The former presents broken hairs or stubs, with a base more or less scaly, depending on the presence of the small or large spores; on epilation the hair root is always swollen; itching is a prominent symptom; the onset is gradual. *Alopecia areata*, on the other hand, presents a floor pearly white without scales or pruritus; neuralgia may for several days have preceded the appearance of the bald spot; the shaft of the hair is not affected, but the root is found to be atrophied instead of swollen. *Alopecia syphilitica* presents a moth-eaten appearance of the scalp. The acute lesions of impetigo contagiosa are always discrete; the base is slightly erythematous; the contents of the vesicle are clear, but soon become purulent. If the vesicle is not ruptured it dries up in a few days, leaving a green scab, which soon falls off, when a red base is seen. The mouth, chin, nostrils and occiput are generally involved; as there is some pruritus the pus organism may be implanted by scratching on any part of the skin. *Pemphigus neonatorum* (which is not always a syphilitic lesion), and a pustular syphilide are often mistaken for impetigo. The *pemphigus* eruption appears about the second or third week of life, generally on the palms of the hands and the soles of the feet, also about the thighs and buttocks; the lesion is a bulla, not a vesicle as in impetigo; there are very slight if any areolae. *Pemphigus syphiliticus* may also appear during the first week of life; the contents of the bullae are always pustular; the fingers are attacked in preference to the palms; the classic figure of infantile syphilis is often present.

Pustular eczema involves the entire thickness of the skin and not the epidermis alone. The pustular is the third stage of eczema, being preceded by an erythema; the formation of vesicles and the oozing of infected serum cause pustulation. *Eczema infantile*, *intertrigo* and *dermatitis seborrhoeica* are found more often in infancy than are all other cutaneous diseases; successful diagnosis and treatment will relieve two-thirds of these cases. The lesions of infantile eczema do not differ from the acute eczema of the adult; erythema papules and vesicles are always present, the escaping serum from the ruptured vesicles forming the familiar crusts. An intertrigo is due to local irritation by acid urine or by feces or by confined perspiration in fat children; the inflammation is always deeper in the folds, gradually disappearing toward the periphery. The exudate is thin and does not stiffen linen, differing thus from that of an eczema. The latter may develop in intertrigo; and the lesion then assumes all the characteristics of a

true eczema. A congenital syphilide of the buttocks may be mistaken for an intertrigo; the latter is generally limited to the site of the napkin; the erythema of a congenital syphilide may extend down the legs even to the soles of the feet. Eczema seborrhoeicum, especially of the buttocks, is seldom, if ever, moist; and only slightly itchy, differing thus from eczema; the erythema is more pronounced at the periphery than at the folds, the advancing border resembling that of a ringworm, it being raised and scaly. Tinea barbae or sycosis parasitica, sycosis non-parasitica and eczema of the head are often confounded. The primary lesion of *tinea barbae* is always scaly; soon becomes indurated; and the lumpy or boggy condition typical of ringworm soon appears. In *sycosis non-parasitica* the hair stands in the center of a small lake of pus; the hair is easily extracted and without pain, while epilation in ringworm is always painful. *Eczema pustulosum* of the head is always a secondary infection. The ever present primary lesions are to be found here as elsewhere. The microscope should aid us greatly in diagnosis here.

Stupors.—W. Hays (*N. Y. Med. Jour.*) submits a careful differentiation. In *alcoholic* stupor pressure over the supraorbital nerve will usually elicit a response, though it may be with difficulty; and the patient will often vehemently protest with words or blows. The face is flushed. An alcohol odor may pervade the breath and the vomitus, if there be any; absence of this odor will almost positively exclude alcoholism. The pupils are equal; either normal in size or slightly dilated and reacting to light. There is no lateral deviation. The pulse is rapid, full and strong. Respirations are of normal frequency; but deep and sometimes stertorous. The skin is very commonly cool and moist; the temperature either normal or slightly subnormal, unless delirium is present, when there is a rise of temperature. A cerebral lesion may coexist with the drunkenness; and great care must here be taken in the diagnosis. The stupor of *apoplexy* is deeper than of alcoholism; it approximates coma. The face is suffused and cyanotic; sometimes pale. The pulse is full, slow, and of increased tension; the artery often shows atheromatous changes. The respirations are slow, noisy and stertorous; oftentimes they are irregular; Cheyne-Stokes breathing may be heard. The cheeks are blown out, with spluttering of the lips—more marked on the side of the unilateral paralysis, if this be manifested in the face. The temperature may be normal or subnormal; though in cases likely to prove fatal fever may be found. The pupils are dilated, often unequal, and do not react to light nor consensually. Hemorrhage into the pores or the ventricles will produce contracted pupils, because of the irritation of the nucleus of the oculomotorius nerve. Conjugate deviation of the head and eyes, or persistent turning to one side—that on which the hemorrhage has occurred—may be present. Unilateral facial paralysis is indicated by the droop of one angle of the mouth, the effacement of wrinkles on the affected side, and the flapping cheek. Greater flaccidity of the limbs on one side may be noted by raising them and letting them fall; those on the affected side will droop as though dead. The skull should be carefully examined for possible injury; it may be important, however slight it might appear. (A fracture of the internal plate of the calvarium or on

the opposite side by *contre-coup* may accompany a slight contusion.) The apoplectic onset varies in suddenness, depending on whether it is due to cerebral hemorrhage, embolism or thrombosis. Stupor or coma, with hemiplegia, complete or incomplete, may occur in the course of pachymeningitis interna hemorrhagica. In *opium poisoning* the patient can be aroused unless very profoundly narcotized. The face is at first pale—later dusky and cyanotic. The pupils are strongly and equally contracted. The respirations are slow and may drop to eight a minute. The pulse is slow and full. The temperature is normal or subnormal. The skin is warm and moist. The smell of laudanum may be noticed on the breath. *Uremia* is an intoxication due to the retention within the circulation of the excrementitious substances normally eliminated by the kidneys. The patient may be aroused temporarily from the unconsciousness which may be preceded by or be alternate with epileptiform convulsions. The face is pale, swollen and oedematous. The breath exhales a urinous or sweetish odor. Examination of the urine shows evidence of renal disease. The pupils are equal and usually widely dilated, though they may be normal and reacting to light. There may be twitching and rigidity of the extremities. The pulse is rapid. The respirations are frequent and irregular; dyspnoea or even Cheyne-Stokes breathing is occasionally observed. The temperature is usually normal; but may at times be subnormal. Convulsions tend to elevate temperature. If the use of the ophthalmoscope is possible, nephritic retinitis may be discovered. Sometimes uremic hemiplegias transient in their nature and unexplainable pathologically may be noted.

Canal Zone Mosquitoes.—Mr. August Busek, having been detailed by the United States Government to collect mosquitoes on the Isthmus of Panama, has secured larvae of 83 species, of which 30 are new to science. All have been deposited in the National Museum at Washington. Mr. Busek has spent three months on the Isthmus during the mosquito-breeding time, covering the end of the dry season and the early part of the rainy season. It has cost, and is costing, much money and labor to protect the lives of men working on and about the canal from the ninety odd species of mosquitoes now known to exist along the route; nor was money and labor ever better expended. Mosquitoes do not fly very far away from the place of their birth. They keep close to their food supply. Those that effect the inhabitants of a town or camp do not normally come from a greater distance than 200 yards; it is this fact, states the Evening Post, which renders the sanitary work of the Canal Commission possible. The land around every settlement is cleared by the removal of all brush, undergrowth and grass; only shade and fruit trees are left, and these are thinned out to admit sunlight and free ventilation. Wherever possible, swamps and lowlands are filled in with some of the ample material taken from the Cullbra cut. Then the whole area is drained so that the surface water will run off. Ditches and slow-flowing streams are kept clear of mosquitoes by drippings of oil or of copper sulphate. Swamps and pools are oiled at least once a week. Water barrels, buckets and pails must be screened or oiled; and all tin cans buried.

Even the old cast-off machines, brush-covered relics of French occupation, are drained of their puddles of water. If many insects infect a camp or town, it is fumigated. Such methods as these have made the canal zone as healthful as most American cities. The stegomyia has become very scarce; one may live for weeks on the line of the canal without seeing a single specimen. It breeds only in artificial receptacles (barrels, water coolers, bottles, tin cans, etc.), and around human habitations; it is essentially a domestic variety, never being found away from man. This fact makes it possible to eliminate absolutely this dangerous insect; and thus to obviate a yellow fever epidemic.

The malaria conveying varieties, included under the generic term anopheles, are also being vigorously attacked in the canal zone. The species of this group usually deposit their larvae along the edges of slow-flowing streams and stagnant pools; but Busek secured specimens also from the bottom of an old boat, from an abandoned dump car, from holes in trees and in similar out-of-the-way spots. Certain genera (megarhinus, psorophora and lutzia) instead of spreading any disease hostile to man, exterminate the weaker kinds; they are the cannibals of the mosquito world.

Liver Abscess.—Curtis (Clin. Jour., Nov. 6, 1907), considers that operation should always be arranged for when exploratory puncture is decided upon, so that the site of successful puncture may be followed up at once, but one anaesthesia being then required. We puncture where the physical signs are likely to indicate the presence of pus. Redness, edema and a localized tumor may be evident. In from 70 to 80 per cent. of the cases the seat of the abscess is in the right lobe; in from 5 to 15 per cent. in the left lobe; in both lobes in 9 per cent.; in the Spigelian lobe in from 2 to 5 per cent. The upper and posterior part of the right lobe is the common seat of abscess, which occupies the concave surface much less frequently. If the abscess is evidently pointing we simply follow up the exploratory needle (which after puncture has been left in situ) with a long narrow-bladed knife. The abscess cavity is rapidly struck and the pus evacuated. We then insert a short, wide-bore tube, which is sutured to the integuments. There is practically no danger of serious hemorrhage. If there are no signs of "pointing" we must seek the abscess. For exploratory puncture we thrust a trocar and canula of fairly wide bore through either the eighth or ninth intercostal space in the anterior axillary line; or, failing here, through a point in the nipple line just below the right costal margin. If this procedure is also negative in its result we try in the ninth or tenth intercostal space, vertically below the angle of the scapula. If pus is found the rib may be exposed and a portion excised; but such excision is not always necessary. On deepening the incision, if the parietal pleura is exposed, it is dissected up and the layer over the diaphragm separated, so as to be brought into easy opposition with the parietal layer, to which it is then sutured. When this is done, or if the pleural cavity has not been opened, the diaphragm is incised along the line of the canula, which is left in situ. The liver should be pushed

well up against the diaphragm, so as to prevent the escape of pus between this muscle and this organ. A pair of long-bladed dressing or polypus forceps is now inserted by the side of the trocar, and a drain tube introduced along the track thus dilated up. When the pleural cavity has been entered gauze-packing for twenty-four hours is advisable. Manson, in his "Tropical Diseases," has devised a method of procedure especially applicable to abscesses deeply seated and difficult to drain. After puncture with a large trocar and canula from four to five inches long, with a diameter three-eighths of an inch, the trocar is withdrawn. A drainage tube of corresponding bore closed at its inner end but having a wide lateral opening made close by, is stretched taut on a stilette, so as to elongate and narrow its calibre considerably. In this condition it is thrust along the canula to the back of the abscess. The canula is then carefully withdrawn and after it the stilette, having the now completely contracted drainage tube in situ, the return to its normal calibre entirely preventing any leakage of pus along the track of the diaphragm. It may be necessary to open the abdomen; if then the liver be found adherent, no difficulty will be found in opening the abscess. Gauze pads may be inserted in the peritoneal cavity in preference to the canula; the pads promote adhesions the better. Even where there are no adhesions the risk of sailing the peritoneum by the escaping pus is not great; preliminary suturing of the friable capsule of the liver to the peritoneum has been largely abandoned.

Iridectomy for glaucoma is ably discussed by Berry (Edinburgh Med. Jour., Nov., '07), in a contribution to the jubilee for Von Graefe, who introduced the operation. Berry uses myotics only in the after treatment on the principle that they can then do no harm and may possibly benefit; they are useless as a substitute for iridectomy. Berry considers that statistics of the results of glaucoma operations are misleading. Oftentimes the diagnosis between glaucoma and optic atrophy has been at fault, and a wrongly diagnosed case has appeared in the statistics. Iridectomy can permanently arrest glaucoma in all stages and in whatever form except the hemorrhagic. The longer the disease has lasted, irrespective altogether of the destruction which it has caused, the less likely is iridectomy to succeed. The operation should be done as soon as the disease is unmistakable. In differentiating between glaucoma simplex and optic atrophy Berry relies upon Bjerrum's test. Iridectomy should always be tried as a first measure, however, far the disease has advanced. The operation should be followed up by myotics, and this treatment should be continued indefinitely. The incision should be made with a keratome and placed as peripherally as possible without leading to difficulties. This situation will vary in different cases; no hard and fast line can be drawn. The amount of iris removed need not be as great as originally recommended by Von Graefe. Cases in which iridectomy, followed by myotics, fails, should be treated by the formation of a cystoid cicatrix, the section into the eye being made so as to include the tissues behind the root of the iris. Berry does not try to get a cystoid cicatrix in all cases, but only when the first operation has not brought relief.

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IS MEDICATION USEFUL?

THERAPEUTIC nihilism has become a fad, even a mark of superiority within a certain circle of the medical profession. To our mind, a man displaying a doctor's sign and holding himself out as earning a living by medical practice, after declaring such views, is in about the same position as a clergyman continuing his ministry after declaring himself to be an atheist or agnostic. Even the most extreme therapeutic nihilism would justify the continuance of a few sanitary and scientific investigators along lines at present connected with medicine and there would still be a limited field for hygienic writers and lecturers, gymnasium instructors, Turkish bath attendants, reformed osteopaths and the like, but the medical profession, in the historic sense, would logically disappear.

In the more restricted sense of nihilism with regard to drugs we are still very far from doing away with the medical profession. Operators, diagnosticians with regard to the probability of duration of life, feasibility of surgical intervention, medical electricians, X-ray manipulators, etc., would still have a legitimate field of usefulness.

But, to deal with therapeutic nihilism from a practical, utilitarian standpoint, we must take it in the somewhat narrow sense of a scepticism as to the value of drugs. We must also admit that at present not only the lay conception of the medical profession, but the actual practice of the great majority of its members, consists for the most part in medication in the narrow sense of the word. Medication as a placebo, as a tribute to established custom or deeply inrooted lay ideas, as an adjunct to suggestion or as a method of holding the patient's allegiance so that the physician may prescribe diet, hygienic measures, etc., can not endure. The profession and the laity are, in the aggregate, too intelli-

gent, and the former too honest and the latter too businesslike, to allow the continuance of drug therapeutics unless it is of genuine value.

Personally, we can see no general *a priori* principle to justify therapeutic nihilism even in the limited sense of a lack of faith in drugs. It does not seem worth while to argue that various mechanic measures, including operations, are of incontestable value in properly selected cases. Nor is it necessary to discuss the value of antiseptics, of cleansing washes for various cavities, or that of heat and cold, externally or internally applied. We might claim that a physiologic salt solution, administered solely for the purpose of filling the blood vessels or at a high temperature by the bowel to stimulate renal activity and portal tonicity, is a drug, but we prefer to limit ourselves to the ordinary use of terms.

The great majority of the functions of the body are either directly chemic or depend upon chemic activity. It does not, therefore, seem unreasonable to assume that when disturbed, they may be restored to the normal by appropriate chemicals or that they may, at least, be provisionally assisted by chemicals. We may even expect chemic assistance from substances not directly concerned in normal physiology, or capable of being chemically changed into such substances. We must also admit that a chemic substance may be employed directly to counteract an excess of a physiologic chemical or to supplant it, when the action is identical for the purpose in question. (A fixed alkali, as magnesia for hyperchlorhydria, or phosphoric as a substitute for hydrochloric acid.)

In addition, however, it seems to be firmly established by an empiricism that is not only clinical and superficial, but experimental and scientific, that various bodily functions may be influenced not only by mechanic and vibratory physical forces, but by chemic action, when the functions themselves cannot be considered directly chemic and when we can not imagine that we have influenced the ultimate chemic processes of the body so as to secure a restoration to the normal. For example, the drugs commonly used to prevent pain, or to stimulate the cardio-vascular apparatus, or the reverse, are entirely foreign to the physiologic economy; the functions are not chemic in the direct sense, nor have we influenced the ultimate chemic processes upon which the integrity of the nervous and muscular structures depend. But, in some way, as incontestable as it is finally inexplicable, we have produced the desired result.

It must be admitted that the great majority of drugs which are essentially foreign to the economy, do not produce permanent results. Sometimes the temporary amelioration of unpleasant symptoms is more than balanced by untoward after effects. More often, if wisely

used, we can relieve the patient while practicing more radical measures of cure, surgical, mechanic or medicative along the first line mentioned and we can tide over emergencies which would otherwise prove fatal. Even the expression "relieve the patient" does not apply solely to the patient's subjective condition. An anaesthetic administered during an operation, or morphine or atropine given for colic, not only spares the patient unnecessary pain, but actually diminishes shock, or relieves spasm and thus has a favorable action, even considering the patient as a viable organism.

It may be stated almost as a general principle that the immediate and indisputable effects of drugs which even operators in the narrowest sense must admit (for instance, morphine, general anaesthetics, cathartics, etc.) do not constitute the really strong points of drug therapy. On the contrary, the strength of the internist as an administrator of drugs, lies mainly in the judicious use of chemicals which act slowly, which influence osmotic processes, which supplement or counteract secretions, or which combat the various individual manifestations of disease and thus allow the physician to assist natural recuperative powers, somewhat as a skillful angler plays a fish.

It is a very specious motto to treat the patient and not the disease. In so far as this implies that we cannot conjure a disease by supernatural specific medication, or that we must duly study the strength of the physiologic processes of the patient not directly affected by the disease, or that we must treat not the name of the disease, but its actual manifestations in the particular case, the principle cannot be too strongly emphasized. Nevertheless, to a large degree we must treat the diseased portions of the body and a great deal of stimulation, sedation and other treatment directed at the patient himself, is worse than useless. For example, digitalis and other cardiac tonics are often given to typhoid and pneumonia patients whose pulses are actually stronger than that of the prescriber. In many diseases, as syphilis, malaria, and infections or parasitic invasions pretty directly accessible to antiseptics and parasitocides, our most efficient treatment is directed at the cause of the disease, and there is very little reason to suppose that our remedies do the body itself any good. A very practical point in the therapy of syphilis is the failure to realize the value of mercury throughout the disease, and, conversely, many practitioners not only fail to secure good results, but positively damage the patient's general health by enormous doses of iodids administered on the old and now disproved fallacy that tertiary syphilis is the vestige of a formerly infectious disease whose results in the body must be dissolved.

It is not essentially illogical to hold the optimistic view that all infections may ultimately be treated either by one common antiseptic or by appropriate individual spe-

cifics, whose toxic action is directly exerted on lower forms of life and to no serious degree upon highly differentiated mammalian structures or which act in an indirect manner to strengthen the resistance of the cells or fluids of the body and yet which have so little influence on the ordinary physiologic functions and so specifically antagonize the invading organisms that, for practical purposes, they fulfill the conception of treating the disease directly.

We say this in full realization that the initial hope of a non-toxic chemic antiseptic has not been realized and is by many regarded as chimeric. But is it chimeric in the case of syphilis or malaria? Whether one common antiseptic drug be found or whether, as at present, we shall use different drugs for different organisms, is immaterial. So, too, it is immaterial from the practical standpoint whether we shall use a foreign substance that, for some reason, spares the tissues of the host and attacks the invader, or whether we follow the lines of antitoxic or opsonic developments. At the risk of seeming old-fashioned, it may be pointed out that at present only one disease is generally acknowledged to be successfully treated by substances specifically connected with the bacterial cause, namely diphtheria and that even this disease is not thus treated with anything like perfect success or indeed with conspicuously better results than follow prompt, thorough, local antiseptics. Variola, strangely enough, is efficiently prevented but not very markedly influenced after its inception, by vaccination, which follows the same general line of attack. On the other hand, the action of mercury in syphilis, of quinine in malaria, of salicylates in rheumatism, which is now regarded as infectious, of certain new preparations of arsenic in trypanosomiasis and of various antiseptics on ectozoa and entozoa seem to afford at least equal hope for the development of a strictly exogenic treatment of infections in general.

ANTE-MORTEM STATEMENTS.

A PHYSICIAN of good standing and well known was recently accused of performing an abortion, the evidence being the statement of the woman, signed to a document in the presence of witnesses immediately she had been given extreme unction by a priest, and believing herself to be at the point of death. The physician denied the charge, and, contrary to expectation, the patient recovered and, on cross-examination, confessed to having perjured herself.

Some time ago another physician, a young man practicing with a diploma but without state license—which he had failed to get on account of being too poor to pay the fee—was accused on similar testimony, the patient dying. He was acquitted on the ground of previous

good character, the testimony of a surgeon who knew the patient and her antecedents and who stated that the patient had gonorrhea and probably syphilis, and that the claim of the accused that his instrumentation had been to treat ulcerations of the vulva and the cervix was a reasonable one, the surgeon himself having diagnosed the ulcerations. Other testimony, partially corroborating the ante-mortem statement of the patient, was to the effect that the instrumentation had been performed many times, at intervals, and that if an abortion had been intended it would probably have resulted more promptly.

Many years ago, it is related, a physician was called to see a patient with hemorrhage from the uterus, was given the history of an early abortion, with the passage of a foetus but not of membranes nor placenta. Instrumental dilatation of the cervix was attempted but was not persisted in because of a dense cicatrix due to a prior pregnancy and labor, the cicatrix extending from the cervix to the posterior vaginal fornix in such a way that rupture into the peritoneal cavity was feared. Expectant treatment, as at that time in vogue, was instituted, but the patient disappeared, and shortly afterward aborted. Whether the patient really thought she had passed the foetus or whether, as seems more probable, she gave the detailed history of an incomplete abortion for the sake of securing an emptying of the uterus, cannot be positively stated. But suppose, as might have been the case, the undue delay had resulted in sepsis: the patient might very likely have made an ante-mortem statement which would have involved the physician in the apparently well substantiated charge of a grave crime.

The acceptance of the ante-mortem statement as evidence is an exception to legal precedents, since the witness does not appear and cannot be cross-examined. The obvious necessity of securing a statement of facts from the victim of a crime undoubtedly originated this custom. It is argued that a person facing death will be fully as likely to tell the truth as one sworn in court, and, a priori, it is reasonable to hold that anyone with any sense of honor or religious conviction, especially orthodox religious conviction of hyperthermic nature, will be even more likely to abstain from perjury than a person expecting to live many years in which he may atone for his sin.

So far as we can venture an opinion on a legal matter, it seems to us that the trouble with the acceptance of ante-mortem statements is not the general principle that they should be received as evidence, but the tendency to give them precedence over contradictory evidence by a living person. While it is sound logic that the expectation of immediate death should induce a person to tell the truth, there are three opposite tendencies to which a sufficient weight has not been attached.

First of all, a great many persons do not show the appreciation of the solemnity of death which we should expect, but their minds are occupied with details appealing to their vanity. This vanity may take the form of an interest in the physical and material niceties of the funeral and the monument or an endeavor to leave behind an untarnished character. The latter phase of mentality may, and in the first case mentioned unquestionably did, lead to a false statement, which would have been accepted as ante-mortem in the technical sense had not the patient surprised everyone by recovering. In criminal cases in general, and in abortion cases in particular, the dying person is especially apt to lack the mental gravity presupposed in the principle of accepting an ante-mortem statement as legal evidence. Moreover, more or less altruistic inclinations, as to spare members of a family from disgrace, to provide for the payment of insurance, etc., may lead the decedent to make false statements, even in the face of death and in the presence of expressed religious convictions.

Secondly, it seems to be very frequently, even generally, overlooked that a dying person is a sick person, even if the cause of death is essentially traumatic, and that, while the mind may be superficially clear, or even superactive, the very fact that the person is dying deprives him of a normal viewpoint and renders his statements doubtful. Even a mild state of sepsis may produce delirium or, at least, detract from the normal action of memory and judgment. We have all seen cases of felon or ulcerating tooth, not serious enough to warrant more than a statistic fear of death, and without true delirium or stupor, but in which it has been perfectly plain to all that the patient could not be considered *compos mentis*. Yet courts have generally assumed that statements signed by a woman overwhelmed by sepsis, in addition to the purely physical shock of an abortion, are to be taken at par with the sworn direct testimony of a healthy person. Indeed, when these statements have been opposed to the testimony of the accused in an abortion case the former have usually been tacitly admitted to be more reliable.

Thirdly, ante-mortem statements are commonly subject to all the objections applicable to testimony prepared from a partisan standpoint and elicited by leading questions. In cases of suspected manslaughter and criminal abortion especially, it is a common procedure to have a representative of the prosecuting official constantly at the bed-side, to seize the first opportunity of returning consciousness or of temporary strength secured by artificial stimulation, to secure the signature of the patient to a statement drawn up—often without the assistance of the patient—in accordance with the general impression of the case presented by circumstances. It happens with significant frequency that the dying person makes an ante-mortem statement entirely

at variance with that expected or that the document prepared as an ante-mortem statement is disproved by the voluntary testimony or forced confession rendered after unexpected recovery, or that an ante-mortem statement admitted as evidence is controverted by overwhelming contradictory evidence.

FRESH AIR OR HOT AIR?

ONE of our contemporaries contains an article whose writer alludes somewhat scornfully to drug therapeutics. Being called in consultation in a case of pneumonia, he advised fresh air. The attending physician thereupon replied somewhat as follows: "Now, doctor, what shall we do for the patient?" What the consultant answered is not stated, but we are led to infer that the consultant considered his advice sufficient for the case, and that he held in contempt the implied demand of the attendant for some medicinal or other directly applied therapeutic agent.

It is obviously impossible to sit in judgment on a case without a definite knowledge of all the circumstances. It may be that the patient was of good resisting power, that the pneumonia was a mild, local catarrhal involvement or that a genuine pneumonia, in the ordinary sense of a lobar invasion by pneumococci, was nearly resolved, that the attendant was inordinately devoted to drugs and devoid of hygienic common sense, so that the patient, otherwise in a favorable state of convalescence, was kept in a hot, stuffy room, with a leaking gas stove and really needed nothing more than a liberal supply of fresh air to complete his recovery.

But a case cited in medical literature is of value, not so much for its own historic value as for its lesson in regard to general principles. If such exceptional conditions had existed, the fact should have been made plain in the report. As the case stands, we can scarcely see how it can be interpreted to mean anything else than the supremacy of hygienic measures, the futility of medicinal or other direct therapeutic measures, and the contention that the physician, attending or consultant, is to consider himself as a hygienic adviser.

No one can oppose more strenuously than the writer the excessive and illogical administration of drugs or the narrowing of therapeutics to medicinal agents or even the use of thermic, electric, radiant or other forms of therapy applied directly to tissues. Nor do we overlook the fact that a consultant may err in being too courteous toward the attending physician by taking too much for granted, and that a large measure of his value to the patient consists in his assuming a critical attitude with regard to various sanitary, hygienic and even social and ethical matters. Regarding the case as a stranger, uninfluenced by various preconceived ideas,

he may detect local causes for disease, imperfections in nursing, dietetic errors, even gross neglect or criminality which would escape the attention of the attendant.

In the vast majority of instances, however, details of this sort may properly be considered as extrinsic. Even if flaws are apparent, as a rule they will have been noted by the attendant and passed over as inevitable.

The implication that a consultant has discharged his duty, even in the narrow commercial sense of delivering the goods for which he is paid, by calling attention to some obvious infraction of hygienic law, is, it seems to us, absolutely incorrect. Only a very peculiar complication of circumstances, including gross neglect or gross ignorance on the part of the attending physician would, in our opinion, justify the consultant in thus limiting himself. We recall a case reported as given up to die of inanition, by several practitioners of good standing, though it may be said that some of them were surgeons in the very narrow sense and that the rest had, in some way, acquired a totally erroneous conception of the case. The patient called another physician, not in a professional way at all, but to request his services as pall bearer at her funeral. "Erebus," he remarked, (only he said it in English), "you are not going to die," and he immediately intruded his professional ministrations with the highly unscientific advice to let the patient eat an apple and to follow it up with more nourishing food. This episode occurred over ten years ago and the lady is still alive and enjoying good health.

Every physician can recall instances in which he himself or at least some one else has overlooked very simple explanations and ridiculously trivial relief of apparently fatal conditions. But, in the vast majority of instances consultants are employed, not to call attention to everyday matters of hygiene or routine medical practice, but to explain actually existing lesions of serious degree and, in such instances, whatever attention is paid to diagnosis, prognosis and the environment of the patient, the prime object of the consultation is "What shall we do for the patient?" If this question does not arise as an emphatic demand on the attention of each party to the consultation, it may well be asked, "Why was the consultation called?"

It should also be plainly recognized that if we are to set aside, with nihilistic scorn, what is ordinarily considered *therapeutics*, the excuse for the existence of a medical profession is taken away. Some few physicians, relying on prestige, notoriety, social standing, etc., may collect fees for advising fresh air, exercise, ocean voyages, rest and massage, but the profession as an institution will cease to exist if it can offer nothing more immediately applicable to the patient than hygienic mottoes which every intelligent layman ought to understand.

SHAKESPEARE'S MEDICAL KNOWLEDGE.

DR. WAINWRIGHT has produced a most charming book on *The Medical and Surgical Knowledge of William Shakespeare** which can be rightly appreciated only in an appropriate atmosphere. The evening; the soft light of the shaded lamp; the mellow warmth of a grate fire; a snug and ample armchair; the workaday coat discarded for the smoking jacket; the feet in comfortable slippers—such are fitting conditions for the reading of this *edition-de-luxe* volume, which manifests in its author vast reading, an affectionate insight, the Shakespearian spirit and a mind and nature most generously cultivated.

Shakespeare (or Shakspeare, or Dr. Wainwright has it) has well been called "the thousand-souled," for there seems to have been no aspect of human life, no cosmic phase indeed, with which he was in sympathy. He certainly evidenced a remarkable acquaintance with the medicine of his day, in which there was much that is valuable to us in this twentieth century. The poet, who died in 1616, showed in *Hamlet* (which was published in 1603), an understanding of the circulation of the blood. Harvey announced his "discovery" in 1628, although he stated that he had for nine years previously been demonstrating the subject in his lectures at the "College of Physicians" in London. The fact is that Harvey's, like all epoch-making achievement, was the culmination of the patient labor and research of many men unknown to us to-day; his was the key-stone in an arch that had been many years a-building.

Our present-day conclusions concerning immunity are well based on scientific demonstration, such as was impossible in Shakespeare's time; yet he manifests a fairly correct understanding of the antitoxic effects of minute doses of septic substances. And, indeed, as Wainwright points out, Galen, Mithridates, and the physicians of Nero's time understood very well this protective and immunizing principle. The great dramatist expressed opinions concerning hypnotism and suggestion which are at least as well-conceived as are ours to-day, and he recognized well the power which mind oftentimes exercises over matter. Infection, both physical and psychic, were well understood by him. We are to-day considering, as rather a novel idea, the advisability of music as a therapeutic agent; Shakespeare realized its influence both to "help madmen to their wits" and to "make wise men mad."

The experimental medicine of our day was certainly no new thing several centuries ago. Drugs were tried first on cats and dogs—"creatures of no esteem"; such "as we find not worth the hanging (but none human)." There seems, however, to be no record of anti-vivi-

section legislation in those matter-of-fact days. They bled for fevers in Shakespeare's time; and though many lives were by this operation cut off untimely, we make no doubt that many more were saved. With our scientific and discriminating knowledge we should to-day find venesection a most salutary measure in appropriate cases. Shylock told of the fear of cats, quite in the manner of Weir Mitchell's interesting paper on Ailurophobia. And by what prescience were the strictures of Cabot and Emerson concerning urinary analyses antedated, as thus: "What," asked Falstaff, "said the doctor to my water?" "He said, sir," answered the page, "the water itself was a good healthy water; but for the party that owned it, he might have more diseases than he knew for." The promiscuous dispensing of patent poisons was, as with us, punishable by the law; but in Shakespeare's time the punishment more nearly fitted the crime. The sale of them was "present death." And empirics and quackeries were frowned upon; they were not to be preferred to "the congregated college."

Shakespeare constantly surprises us by his succinct symptom-accounts of apoplexy, hysteria, syphilis, epilepsy, the plague, goitre. His physiology was not very far wrong. He recognized the influence of heredity. He knew that wounds heal best by first intention; that they must heal from the bottom. Many drugs—aconite, mandrake, opium, colocynth, chamomile, hyoscyamus—are mentioned with understanding of their properties and effects. Altogether Dr. Wainwright's valuable book impresses upon us that there is little new under the sun; that those who lived in other times than ours knew a great deal; that after all human thought, as well as human nature, is not radically different from era to era; and that a modest respect for the past were becoming even to this climatic twentieth century.

SCIENTIFIC NUTRITION SIMPLIFIED.

THE advent of the book entitled as above rejoices us. We confess to have been somewhat puzzled during the last year or so by the various works expounding various theories of nutrition, and setting forth various and oftentimes conflicting systems of dietary. But now, in the volume before us, the whole matter is properly adjusted; and for this most comforting achievement we cheerfully thank the author, Mr. (not Doctor) Goodwin Brown and the publishers, the Messrs. Stokes. Yet when we reflect upon the matter we must conclude with some surprise, and a little mortification, that we seem to be just about where we were before the whole subject began to be discussed.

Mr. Brown's work is "a condensed exposition for

* Published by the author.

everybody of the theories and discoveries of Chittenden, Fletcher and others." In addition to the teachings of these gentlemen those of Higgins, of Sager and of Irving Fisher receive also due respect and consideration from Mr. Brown. He is himself a Fletcherite; and he finds himself to have been so vastly benefited by his conversion that he thinks it but right he should have prepared an essay, since the subject has not yet been treated by a private person who has tested the merits of Fletcherism "in his own life and found it good."

In sober earnest, Mr. Brown has produced a useful and a very creditable book. It is made up largely of extracts from the works of the authors mentioned and from others. The author intends it as a practical guide; he has made "a digest of the points which he has found most valuable in working out his own problem, with the idea of presenting a sort of lawyer's brief of the subject." We must point out, however, that his evident bias is toward Fletcherism, and the reader would infer—erroneously, we think—that the views of Horace Fletcher are universally accepted by physiologists. This is not the case. Mr. Brown, however, makes some errors which are really serious and which a practitioner—were he writing such a book—would certainly not make. He condemns alcohol utterly; which is a foolish position to take. Worse than this, however, he speaks quite cheerfully of caffeine in large doses. "Fifteen grains will enable the user to do the best mental work of which his brain is capable for hours at a stretch." Five grains is the maximum dose of this drug; a layman, moreover, should never discuss or advise concerning any drugs under any circumstances whatever. The result might be as when the examiner asked the student coming up for his degree, "what is the dose of croton oil?" "A drachm," was the answer. Presently the student recalled the correct dose, acknowledged his mistake and said one minim was right. "No matter, rejoined the examiner, "the patient is dead by now."

RABIES.

A TREATISE entitled "Rabies and Its Prevention" has recently been published by the Bureau of Animal Experimentation at Washington. Dr. G. H. Hart is its author, and his information and fulness of experience have been altogether adequate to make this an authoritative report. The reader of it cannot doubt that at present true hydrophobia is increasing in these United States; largely by reason of the absence of laws on the subject, or of the laxity with which existing laws are enforced.

The increased frequency of rabies in the District of Columbia "during the last ten months has been alarming." Nor is there any state in the Union of which this will not hold true. Yet everywhere have earnest efforts for the suppression of this disease encountered the most violent and absurd protests. The condition of things in and about Washington is typical. So many cases occurred during the year 1899 that the commissioners required the muzzling of all dogs for a period of six months; but this measure proved ineffective by reason of the powerful and essentially inhumane opposition that was manifested. The pound service, however, was increased; 3,598 dogs were captured in that year as against 827 the year before. A very decided falling off in the disease resulted; whereas 51 cases of rabies had been diagnosed at the laboratory of the Bureau in the year ending June 30, 1900, there were but sixteen cases the following year. During 1907 rabies was positively diagnosed by Dr. Hart and his associates in 44 dogs; of these 33 were found in or near the District of Columbia. The latter were found to have bitten sixteen people and 46 dogs. Obviously an enormous extension of the disease must be anticipated when rabid dogs bite other dogs to the extent here indicated.

The muzzling of dogs for a few years would suffice for the complete eradication of rabies. Other domestic animals may contract the disease, but they are a negligible factor regarding the transmission of it. The simple and not at all cruel plan of muzzling dogs has not obtained by reason of the general ignorance and apathy on the subject. And such mushy and fatuous sentimentality as anti-vivisectionists have shown during the past legislative season has stood the negligent owners of dogs in very good stead. In matter-of-fact North Germany extremists in dog worship have little influence; and there the enforced muzzling of dogs has resulted in the practical elimination of rabies. Ignorance and selfishness have failed equally in Great Britain; rabies is now unknown there. Dr. Hart well observes: "Many dog lovers cannot appreciate, or are indifferent to the anxiety, mental terror and suffering of several thousand human beings in our country yearly, and the actual death of from 100 to 300 yearly, not to mention the suffering and death of countless dumb brutes. But once a dog-muzzling law is passed dog owners are up in arms, using their time, influence and money to secure its repeal or prevent its enforcement on the ground of alleged cruelty."

As the summer season is approaching a practical consideration of hydrophobia were advisable. The disease is, of course, rare, even in dogs; and it is computed that of those bitten by rabid animals only

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sixteen per cent. contract it. The danger is greatest when the exposed parts are bitten, and when nerves are severed or lacerated in the bite. Many escape the disease because the clothing removes the virus in the saliva before the flesh is wounded. The incubation period is from a few days (earlier in children) to several months; true hydrophobia is said to have developed eighteen months after the bite. Pseudo-hydrophobia (lysophobia) must be differentiated; this is a psychic aberration occurring in people that have been bitten by non-rabic dogs. The diagnosis of true rabies is established by the demonstration of the Negri bodies in the brain or spinal column of the suspected animal. The head should be severed and at once expressed to the laboratory of an expert pathologist or to the nearest health department, where within five minutes a decision can be reached. Immediate treatment of the wound by cauterization is essential; this may be effective even twenty-four hours after the bite. And in view of the anxiety which naturally follows upon such a bite we should cauterize, even when the diagnosis of true rabies is not positively assured. The inconvenience is negligible under the circumstances; and the injection of cocaine in and about the wound should make the operation painless. The Pasteur treatment should follow in all cases where the diagnosis is established.

STRANGULATED EMOTION.

PROF. MUNSTERBERG, of Harvard, has from time to time made contributions, all interesting and some quite novel, on the relation of psychology to crime. These have now been incorporated in his book "On the Witness Stand,"* which should be found of practical value, not only in the comparatively narrow field of jurisprudence, but in a wide range of human affairs. We note here especially his pregnant observations on the physician as psychologist. In cases of nervous disease, considers Prof. Munsterberg, we should oftentimes be able to make out a diagnosis without requiring any "confession" on the patient's part; without awakening in him any suspicion that the origin of the nervous affection has been discovered. We may bring to light facts of which even the patient himself is ignorant. "Ideas which are connected in his deepest soul but which he cannot bring up voluntarily by mere act of memoir" may perhaps be brought to expression by the mechanical devices of the association method. As soon as a number of associations have been produced under pressure of the desire to asso-

ciate as quickly as possible, the mind enters into a state of decreased inhibition, in which suppressed and forgotten ideas rush forward. The Vienna school find hysteria to result principally from suppressed affective ideas, and that it can be cured by awakening anew the restrained thought. Hysteria is, according to them, strangulated emotion; and the disease disappears when the forgotten emotional ideas are brought to conscious expression. We all have cases like the following in which none of the patients realized the origin of their sufferings. One woman always became mute after sunset. She had sat once at sunset, years before, at the bedside of her sick father, and had most carefully suppressed every sound in order not to disturb him. The physician succeeded in discovering the suppressed idea in this case, which had had no chance to express itself and had worked disaster in its inhibited form. As soon as the scene of her father's sick bed was recalled to her mind, this woman regained her voice. Another woman could eat no food except liquids; she had been obliged, years before, to suppress her disgust when eating at the same table with a man who suffered from an ugly disease. Immediately this starting point was consciously associated again she was ready to dine like others. A third woman was constantly tortured by the hallucination of the tobacco odor. She had long before heard by chance, in a room full of smoke, that the man she loved was in love with another, and she had on that occasion had to suppress her emotion. Immediately she was made to connect the smell again in consciousness with that first strangulated emotion, the hallucination disappeared. Hysterical dislocations, contractions, paralyzes, aberrations of the touch, sense and the like can all be cured if the long-forgotten emotional ideas which in each case began the disturbance can be recalled. The association method which psychology has evolved should here be most helpful; by thus discovering the secret connections of ideas, health and strength may be restored to many nervous wrecks. We believe, parenthetically, that the definition of hysteria submitted by Munsterberg does not essentially differ from that of Moebius—that "hysteria is a state in which ideas control the body and produce marked changes in its functions."

The science of psychology is still a very young one; but it will surely become a most useful and indispensable one to the physician, as it will in many other phases of life. At present there is a veritable mountain made up of a chaotic accumulation of data, of facts not yet wisely co-ordinated, of theories no few of which must perish; not a little foolishness is also incorporated. This mountain is now laboring prodigiously, and it will certainly before long bring

*The McClure Company.

forth something much greater than the traditional result. For instance, with regard only to the disease hysteria we have many such expressions as fixed idea, dominant idea, psychoanalysis, strangulated emotion, hypnotism, suggestion, persuasion, re-education and the like. Here seems thus far to be but a jumble of terms, conveying notions more or less clear; yet who doubts that a straightforward and rational therapeutics will soon be evolved from the material which they indicate? And when this comes to pass we may realize Jastrow's rendering of the old saying, "where there are three physicians there will be two atheists," into "where there are three physicians there will be two psychologists." Two, at least, let us hope.

BIBLIOGRAPHICAL

American Practice of Surgery; A Complete System of the Science and Art of Surgery. By representative surgeons of the United States and Canada. Editors, Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D. Complete in eight volumes. Profusely illustrated. Volume four. Octavo pp. 1010. New York: William Wood & Co., 1908.

This great work, representative of American surgery, is now half through the press, and all we have said in its favor has been more than borne out.

One hundred pages are devoted to an elaborate and fully illustrated consideration of the subject of dislocations.

The part devoted to operative surgery is very full and long. The influences and conditions which should be taken into account before one decides to operate, the preparation for an operation, the operation itself, and the care of the patient during and immediately after the operation, are of great interest, and are practically dealt with.

One-third of this volume is devoted to orthopedic surgery, a length which is not usually accorded in a work of this kind.

The text is of a high character and is fully illustrated.

The general practitioner as well as the surgeon will find the work suited to his needs.

The work as a whole cannot be commended too highly.

The Opsonic Method of Treatment. A short compendium for general practitioners, students, and others. By R. W. Allen, M.B., B.S. (Lond.), Pathologist to the Royal Eye Hospital, London, S. E., etc. Octavo pp. 138. \$1.50. Philadelphia: P. Blakiston's Son & Co. 1908.

The author has given in a concise manner a good general idea of this important subject. The results achieved in actual practice are given much prominence, so that the great and ever-increasing utility of opsonic work has been adequately demonstrated. The book is commended to anyone who desires a knowledge of its subject.

A Manual of Fever Nursing. By Reynold Webb Wil-

cox, M.A., M.D., LL.D. Professor of Medicine at the New York Post-Graduate Medical School and Hospital, etc. Second edition, revised. Illustrated. 12mo. pp. 229. Price \$1. Philadelphia: P. Blakiston's Son & Co. 1908.

This little volume covers the subject of fever nursing in a complete and comprehensive manner, according to the latest methods. The book is suited to the physician and to the nurse and will be found of great service by both.

The present edition has been carefully revised.

Post-Operative Treatment. An epitome of the general management of post-operative care and treatment of surgical cases as practiced by prominent American and European surgeons, together with suggestions concerning the technic of certain operations with a view to securing better post-operative results. By Nathan Clark Morse, A.B., M.D., Surgeon-in-Chief to "Emergency Hospital," Eldora, Iowa; District Surgeon, Chicago and North Western and Iowa Central Railways, etc. Second edition, revised and enlarged. Containing 5 plates and 175 other illustrations. Octavo pp. 499. Price \$4. Philadelphia: P. Blakiston's Son & Co. 1907.

There is no more important branch of surgery than the after-treatment, and this book will be found of immense service because the surgeon's assistant can find here the help he needs to make an operation successful. Ignorance and neglect have been the cause of many a death. With this book in hand, the interne can have no excuse for improper post-operative treatment in surgical cases.

Nursing the Insane. By Clara Barrus, M.D., Woman Assistant Physician in the Middletown State Homoeopathic Hospital, Middletown, N. Y. Octavo pp. 409.

This book is the result of fifteen years' experience in a large hospital for the insane. It does not cover the entire field of nursing, although many points in general nursing are necessarily included. Its aim is to furnish special instruction and suggestions to students engaged in caring for the insane, to initiate the beginner, and to aid the more experienced to greater efficiency.

The text seems to fulfill its aim, and the book is worthy a place as a practical hand-book in its specialty.

A Nursery Manual. The care and feeding of children in health and disease. By Reuel A. Benson, M.D., Lecturer on Diseases of Children, New York Homoeopathic Medical College, etc. 184 pages. Cloth, \$1.00. Postage, 5 cents. Philadelphia: Boericke & Tafel. 1908.

This is an excellent little book for those for whom it is intended.

The Border-Land of Epilepsy, Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms and Their Treatment. By Sir William R. Gowers, M.D., F.R.C.P., F.R.S., Hon. Fellow Coll. Phys. Ireland, etc. Octavo pp. 121. Price \$1.25. Philadelphia: P. Blakiston's Son & Co. 1907.

This treatise is based upon a special list of all cases collected by the author, which seemed to be in the border-land of epilepsy. When these cases were collected and classified, their comparison and study revealed a large number of unfamiliar facts

and many instructive lessons, throwing light on the nature of the affections, on their relation to epilepsy, and on questions of practical diagnosis. The most important of these facts and conclusions are included in the text. It is a book well worthy of study on this important subject.

CORRESPONDENCE

TO THE MAN ON THE OUTSIDE.

To the Editor of the MEDICAL TIMES:

Are you the man who will not join the medical society because it is controlled by a ring of college professors or hospital grafters who will sneer at you if you try to occupy the floor but who want you to pay dues so that they may have some one to advertise themselves to? Or are you so busy with patients that you have no time for medical meetings? Or have you got by the practicing stage and have learned by experience how to doctor? Or does the church meeting or the club or the lodge or the party or ball interfere with your attending the medical meeting?

Probably you are not the man or you would not be reading this, for a medical journal is a medical meeting reduced to print and held at the hour of your convenience. But if, by any chance, you are this man, we want just a few words with you.

Yes, we confess to belonging to a ring, a very large one, comprising various general practitioners and specialists, some holding professorships, some hospital appointments, some both, and some neither. In this ring, we "swing patients around the circle," with no very accurate balancing of favors received and favors rendered but, so far as possible, we do try to refer patients to men who are keeping abreast of the times, who have adapted themselves to take care of those patients who have certain ailments and, in so far as we can do so without stealing some one's patient, or going contrary to established affiliations of patient and physician, we also confess to favoring the physician who is a decent fellow and whom we like, always providing that he is competent.

No, we plead innocent to the charge of teaching medical students. Years ago, when we were younger and our character unformed, we did fall under influences that led us to hold the dark lantern while some one perpetrated crimes of this nature. But our share of the swag was so small and the work so hard that we reformed. Tastes and natural proclivities differ but, so far as we can see, medical teachers, burglars, etc., have to work harder for the money that they get from their profession than from the odd jobs of practice and gas fitting, etc., that they do on the side and the hours for the former occupations are inconvenient.

Yes, we have two or three hospital appointments but they came quite unsolicited—we haven't political pull enough to be nominated alderman on a prohibition ticket—and nobody else seems to be consumed with envy because he can't have them.

Now you know just where we stand; let us talk about the medical society. So far as we can judge, it is a place where every man stands on his own merit. As in everything else, after a man has made his reputation, he can receive very respectful attention while

he says very foolish things. So, too, he can be very sarcastic and snippy to his opponents. On the other hand, the man who has not yet made his reputation, may draw a small audience for an excellent paper and may receive scant courtesy when he raises strong points of issue in a discussion. In some societies there seems to be a clique of tail-enders who applaud everything that emanates from some idol and who look broad when anyone else speaks. But these injustices are transient and tend to right themselves. In practically all of the present medical organizations that amount to anything, the majority of the members are independent, clear-headed and right-minded men who believe in fair play and who are too much interested in scientific and practical medicine to support a mutual admiration society or to pander to a clique of medical politicians. In the long run, every member will receive back from the society, just what he puts into it, in brains and work.

If the particular medical society which is vainly trying to get your support is fairly representative of the profession of your locality it must be essentially under the control of the strong, independent, fair-minded men of the profession. If so, there is no excuse for your hanging back. But, perhaps you are right; perhaps there is some sort of political clique controlling the society to exploit its own members. If so, there is only one way to bring about a reform, just as there is only one way to purify general politics when a machine gets control. Join the society, get in other independent men, attack the evil and remember that success is assured in advance—unless we admit that the medical profession is essentially corrupt and weak.

If you are holding back because you are too busy with practice to attend medical meetings, you are too busy to feed yourself or your horse, or to fill the gasoline tank or charge the batteries of your automobile. You may continue seeing (in a quite literal sense) patients at so much a look, but you can't practice medicine successfully or honestly without recharging your brain.

We haven't a word to say against the proper discharge of religious, fraternal or social duties and, both by precept and example, we accept the hygienic necessity of a liberal amount of rest and recreation. But medicine is a serious and engrossing life work and you cannot afford to be so busy without outside interests that you neglect your business.

"Doc."—At about this time of the year, a hundred orators, distributed over the country, will give advice on ethical and business matters to five thousand young men graduating from medical schools. Few of these orators will omit to warn their hearers not to allow themselves to be called "Doc." The advice is good, not merely in the literal sense, but in the broader meaning of emphasizing the importance of professional dignity.

However, both in the literal and in the figurative sense, this advice needs to be tempered with forbearance. There are a great many persons who abbreviate our professional title as unconsciously and with as little thought of offense as they use bad grammar or as some of our own profession say "eczema" with the accent on the second syllable.

Dignity does not mean punctiliousness, arrogance,

a failure to respond to friendly overtures, any more than it means an owl-like silence or wearing a Prince Albert in the morning. On the whole, we are inclined to believe that the recent graduate does not need instruction to be dignified half so much as he needs the advice not to take himself too seriously. It is one thing to be serious about one's work and to be high minded, quite another to make a conscious, constant effort at dignity. The physician who keeps his mind on his diploma, his title and his dignity, makes the same mistake as the clergyman who speaks of nothing but spiritual affairs or the woman who can't get her mind off her virtue.

It is a pretty safe rule—even from the standpoint of self-interest—to wear our dignity, as we wear our clothes, unconsciously, and to object to the manners of our patients, only when there is a conscious violation of decency or a need of correction such as would excuse us for making similar criticisms as to their clothes.

SHALL WE GIVE A MAN A CHANCE TO RETRIEVE AN ERROR?

To the Editor of the MEDICAL TIMES:—

The Medical Society of the County of Erie has censured the Regents of the State of New York for admitting to examination, without sufficient notice to its Board of Censors, a physician who had been forced to suspend practice because of failure to secure a state license. It has also condemned various physicians in good standing who presented affidavits favoring the applicant.

So far as we can obtain the facts of the case, they are as follows: The principal in the case is a young man engaged in another business, who studied medicine, maintaining a fair, though not high, average standing throughout his college course, and graduating. His reputation is in general good. Soon after graduating he began practice without a license, claiming that he was too poor to pay the fee for examination. He practiced for some months before receiving a warning from the Board of Censors that he would be prosecuted. He continued to practice for a few months after receiving this warning, but then desisted of his own accord. He was accused of performing a criminal abortion, but the evidence was insufficient to secure a conviction, and the circumstances were such as to throw considerable doubt as to whether he actually attempted or produced the abortion. No evidence has been presented that he has engaged in other similar cases or that he has been unethical except in engaging in practice without a license. The Regents, after considering the case, have granted him permission to come up for examination, after a lapse of about three years from practice.

In our opinion the crux of the whole question is whether the applicant did or did not perform a criminal abortion. If he did, we believe that he should not be given a further chance to engage in such work, and we express this opinion in the face of the generally conceded fact that many physicians in nominal good standing do perform abortions. Even if the evidence were sufficient to convince the medical profession that an abortion was performed intentionally—and at least two physicians who saw the case consider the evidence as inadequate—we do not see how the Regents can fail

to respect the verdict of no bill reported by the grand jury after consideration of the evidence secured.

Thus, the case resolves itself into the question whether failure to comply with the law regarding licensure should indefinitely disbar a physician from a license to practice. In deciding this question we cannot help being influenced by the general standing of the individual concerned, though we are by no means confident that this attitude is proper from the legal standpoint. Probably the question whether the individual was or was not a good student, whether he did or did not follow ordinary professional customs in regard to advertising, etc., whether he was or was not an agreeable and gentlemanly fellow, should have no weight with the executors of the law. Still, when all these questions are answered in a way satisfactory to general professional sentiment, it is easier to regard the failure to comply with the technicalities of the law as a venial offence. Probably the majority of the physicians of this state, which was one of the pioneers in securing legislation with regard to license on examination independent of those held by medical schools, simply had their diplomas registered at a county clerk's office, and hung out their signs. Cases are by no means unknown in which men of good repute, and even eminence, have failed even to comply with this simple provision of the law.

We do not overlook the fact that every citizen ought to comply with the law as it stands, however inconvenient and however unreasonable it may seem to him, and we do not believe that any right-minded man can question the reasonableness and propriety of our present licensure. Still, we cannot regard as a criminal the man who violates a technical requirement which we did not personally have to observe.

But a more general principle is concerned, namely, that punishment should be reasonable, not vindictive nor excessive. We recall a physician, now dead, whose personal life was always above reproach and whose influence in the medical profession was for many years of the highest character. We acknowledge a personal indebtedness to the influence of this noble old man. Yet, far back in the past he had engaged in unethical means of securing patronage. We recall another physician, active in professional life and for several years prominent in the official life of one of our state organizations before the union of the profession was happily secured. Without being a great man, he is still one whose usefulness and character are generally respected. Yet we well remember his being compelled to apologize publicly for following the advertising methods of a quack. We recall another man, of high scientific attainments, who, to support an aged mother, filled for several years a position in one of the most notorious quack institutions in the country. As soon as he was financially able he sought and secured reputable affiliations.

We do not believe that any profession or any body of men loses self-respect by overlooking past errors and by giving the opportunity to atone for them. Especially do we believe that a fair chance for a fresh start should be given to young men who have not properly appreciated the somewhat recondite requirements of professional ethics or who have been led by poverty or adverse circumstances of other kinds to violations of the law which really involve no important and funda-

mental principle of morality. What one of cannot echo the words of Jeremy Bentham, not only in reference to a condemned murderer led to execution, but in reference to every offender against any kind of law or ethical principle: "There, but by the grace of God, goes myself."

We regret exceedingly that considerable newspaper notoriety has been given to the action of the Erie County Society, particularly as what amounts to formal censure of members in good standing and excellent repute has been placed before the laity.

On the other hand, whatever our opinion may be as to the case in question, and whatever may be concluded as to methods of excluding popular criticism of the washing of our dirty linen, the Society is to be congratulated on having a board of censors who are not afraid of doing their duty as they see it, without fear or respect of persons.

The adoption of the report has also brought to an issue the duty of the Regents of the State in regard to vising the work of local officials. We can see but one possible excuse for the Regents failing to give ample notice to the Erie County censors of the reopening of a case in which the latter body had secured the retirement from practice of an illegal practitioner—namely, the conviction that the latter would act unfairly and ungenerously and would stoop to vindictiveness, and would be influenced by motives of personal hostility. But, if this were the case, the importance of demonstrating the worst form of inefficiency in the local board far exceeds the temporary desires and convenience of any individual.

SCRIBE.

PERSONAL EXPERIENCE WITH ETHERIZATION.

To the Editor of the MEDICAL TIMES:

The writer, having an occasion to undergo a slight though painful surgical operation, was persuaded upon to be anaesthetized. To this I submitted with reluctance, being apprehensive that I would never awake from it. Nevertheless, be the result as it might, I resolved that I would hold on to my consciousness to the last, yielding it only when I must. I took to the operating table with perfect composure in presence of the surgeon, his assistants and nurses, and the cone of ether was applied. I began by inhaling deeply, with long, slow, regular breathings. At first the effect was pleasant. I had a sense of pleasant hesitation, which increased to a sensation of swimming, or floating, about the room in a state of perfect consciousness. Fancies pleasing filled my brain, and distiches of poems haunted my sensorium. I had been writing in verse previous to this experience, which accounts, probably, for the turn of my fancies. It seems strange that such a crowd of fancies could have possessed my brain in the interval that I was becoming anaesthetized—probably not more than a minute.

In a moment my breathing began to grow shorter. I could not as at first fill my lungs. Shorter and shorter came my breath. It seemed that my lungs were contracting against the ether, as if to repel or shut out the disagreeable thing, for it had become disagreeable. Finally I could not breathe at all. The awful feeling of constriction, as if my chest were

bound with iron bands, came on. My surroundings became dark. I could not see. This is death, thought I, and my consciousness became a blank! I knew nothing more until two hours later I awoke in my bed, being tenderly ministered unto by a gentle and sympathetic nurse.

The rationale of the effects of ether in this case is not far to seek. I was conscious of becoming gradually asphyxiated, without any other effect of the drug. I had not inhaled the ether more than half a dozen times, when the remote capillaries of the lungs began to contract. After that process had gone on a certain length of time I was as one in the grip of death; and it was this act of dying that relaxed the bronchial capillaries and allowed air to enter the lungs in quantity sufficient to resuscitate me and stay the threatened peril. Had it been a little less air or a little more ether, I should never have returned to consciousness. Such is the crisis that all pass through who undergo the process of etherization.

DAVID A. GORTIN.

Brooklyn, May, 1908.

RETROSPECTIVE

A Voice from the Far East.—The *Australasian Medical Gazette* relates how "on the fifteenth of the eighth moon there was a burning of opium pipes on the city hill of Hangchow." Several months ago public spirited citizens formed two societies to aid in suppressing opium smoking. They offered to buy pipes if given up before the seventh moon; to give medicine and medical services to those breaking off the habit; to open an industrial school to teach trades to waiters in opium dens; to lend four dollars to those who wanted capital for trade. Five thousand pipes and other smoking utensils were brought in and redeemed; a day was set for the public burning of these trophies of reform, when a large crowd assembled to witness the sight. An address was followed by music on an organ; then the fire was started; and the services were ended with another address.

As a vasodilator, sodium nitrate is, because of its stability, permanence and certainty of effect, preferable to nitroglycerin and amyl nitrate. When given by the mouth its action is usually manifested in from three to five minutes; and when subcutaneously in about two minutes; and this action is maintained from one to two and one-half hours. Both of the other drugs, while quicker in action, are less reliable and less lasting in their effects. Sodium nitrate is, moreover, when given in proper doses (triturations of 1 1-2 grains each), almost entirely without general effects—the throbbing, dizziness, flushing and headache so characteristic of amyl nitrite and nitroglycerin. Cook (*Therap. Gaz.*) reviews the indications for vasodilation in conditions of low and high arterial tension, insisting upon the use of the sphygmomanometer in the treatment of every case of cardiac renal or arterial disease. Any attempt to regulate arterial tension without knowledge of its degree or action is to be working in the dark. In an untired case half a grain of sodium nitrite is a safe initial dose, with a three-hour interval. The adjustment of dosage and interval must be regulated by the sphygmomanometer. Cook finds sodium nitrate the best vasodilator—

most enduring in its effects, most stable and dependable, and giving rise to the fewest unpleasant symptoms. Vasodilatation may be indicated with low or normal tension (all hemorrhage which occurs either during operative manipulation, or in typhoid ulceration, gastric ulcer, pulmonary hemorrhage, aneurism, thrombus or other internal hemorrhages uncontrollable by surgical methods). High tension is abnormal; it accompanies organic disease or it presages its onset. In either case treatment is essential, first by general hygienic measures, then, when necessary, by venesection or vasodilatation with drugs, preferably sodium nitrate.

Facts, observes H. Wittler (*N. Y. Med. Jour.*), even most so-called scientific facts, are not entirely beyond the charge of being mere descriptions of our sense organs. The word "fact," as reviewed by the great untrained mind of man, is not synonymous with truth. It means when so used by this great untrained mind of man, merely sense observation or phenomena. It becomes synonymous with truth only when it stands for some correlated phenomenon, some principle, some law discerned amongst a mass of sense observation. Redness is a fact to common sense; but it is not a truth; the same is to be said of sound. The truth in both instances is a particular form of movement, vibration. All knowledge is more or less relative; and a commonly called fact is the most relative thing of all. This is the reason why the advance of human knowledge has been borne along on "facts" that have almost invariably been found later on to be in need of different interpretation. The newer interpretations have arisen out of the discovery of the causes and underlying principles. The latter and not the so-called facts have then established the science.

Bright's Disease.—From a clinical viewpoint the old classifications of nephritis have always been unsatisfactory. (*La Tribune Medic.*) Even those upon the basis of the gross and microscopic pathology are very inaccurate, as the post-mortem conditions are phases of the same affection, and the pathological process may not have progressed similarly in all parts of the kidney. Yet certain features in the microscopic picture usually stand out more prominently than others; and the actual condition can usually be classified within a given subdivision or group. Many urinary analyses, however, are so at variance with autopsy findings that they must be unsatisfactory from the clinical standpoint. Chronic nephritis is best divided clinically into two classes: Cases with a large amount of albumen, diminished urine, dropsy and without any rise of arterial tension, "chronic nephritis with dropsy," which corresponds with "parenchymatous nephritis," but which has not proved to be always parenchymatous; and cases of "chronic uremic nephritis," which correspond to what has been known as the interstitial type. The latter name has been applied by Castaigne to a group of cases which tend toward uremia, a condition which may show itself only in minor symptoms or which may develop into pronounced seizures. In "chronic uremic nephritis" the urine is increased in quantity of low specific gravity, low in solids, little or no albuminuria, with few or no casts; there is no dropsy, but there are uremic symptoms, which raise arterial pressure and induce hypertrophy. The new classification here suggested is clinical, sufficient for the purposes of treatment, and corresponding closely with actual experience.

Purins, states C. Watsons (*Brit. Med. Jour.*), are constructed on the base C. N., as for example, Xanthin, hypoxanthin, adenin and guanin. These are present in certain articles of diet. Meat and meat extracts contain a large amount of purins; similarly certain glandular organs, such as the pancreas and liver, are rich in them. They are also present, though in smaller amount, in many vegetable foods (in beans, lentils and oatmeal); and they are relatively abundant in tea and coffee. Those which are taken in the diet are "exogenous purins; those in the tissues exist mostly in combined form in the nuclei of cells and in the muscular tissues; Xanthin and hypoxanthin occur in muscle extracts; adenin is yielded chiefly by decomposition of nucleic acid present in thymus, guanin is derived mainly from the pancreas. These tissue purins are known as 'endogenous.'" They exist also in the urine as uric acid, xanthin, hypoxanthin and adenin. About half of the purins in the urine are derived from the ingested food (exogenous), the remaining half being derived from tissue metabolism (endogenous purins). There is at present no evidence that the purin bases are *per se* in any way more intimately concerned in the actual causation of gout and gouty disorders than is their ally, uric acid, which has now been generally discarded. Gout is probably due to intermediate purin metabolism arising from a defect in one or more organs, as revealed by the inability to produce the ferment or ferments required, as a result of which proper oxidation of uric acid does not occur, and the latter consequently accumulates in the tissues in the manner observed in gout.

The Fly Nuisance.—The *J. A. M. A.* (April 11, '08) states that the public health committee of the London County Council has reported that during the summer months of each year it receives complaints of nuisances experienced from flies. These complaints have increased of late years, owing probably to the attention which has been directed to the possibility of the spread of infection by these insects. The health officer was instructed to make investigations into the extent to which nuisance from flies was produced by accumulations of offensive matter, and Dr. Homer reports that he selected in different parts of London twelve centers, at each of which businesses were conducted which might be favorable to the breeding of them. Included in these centers were refuse depots and dust wharves, a manure depot, stables, cowhouses, offensive trade premises and a jam factory. During the last week in June and the whole of August, September and October, observations were made in ten or more living rooms at varying distances from each center. It was manifest that accumulations of manure, and, in less degree, of house dust and other refuse, promoted the fly nuisance, which was noticeable not only in the immediate neighborhood, but at a distance of 2,000 yards or more. The value of the by-law which prohibits the deposit near houses of offensive refuse for more than twenty-four hours is thus apparent. (These observations are of interest in connection with those made concerning New York City by Dr. Jackson, as noticed by Dr. Huber in his paper on Environment and Disease, in the March issue of this Journal).

The Plague in Ecuador.—This disease has been officially recognized in Guayaquil. Measures are being taken in Quito for its prevention. Outside the latter

place a temporary hospital is being erected; and a cremating oven is being made available. All medical men are required to report immediately any suspicious cases which they may see; and a penalty is provided in case of wilful non-compliance with this order. Circulars are being distributed instructing the public regarding the sanitary measures to be taken in the homes, including the extirpation of rabbits and guinea pigs. House-to-house inspections are being instituted. All organic matter in rubbish heaps is being destroyed; all refuse is treated with lime. The market place has been repaired, and is kept clean.

Laboratory Aids to the Diagnosis of Tuberculosis.—T. H. Coffin would examine the urine, sputum, feces, the bodily fluids and discharges. He has found that microscopic examination of the blood in various forms of tuberculosis in children usually shows a marked diminution in the hemoglobin and the number of red cells. There might be a leucocytosis if the process were associated with suppuration; this is not always the case. A blood count might in some cases help to distinguish tubercular meningitis from other forms of meningitis. Chronic cystitis or a tubercular pyelitis might be a local manifestation of a general tuberculous process. The bloody or bloody-purulent sediment of the acid urine in urogenital tuberculosis contains shredlike or rounded, sometimes ragged floculi, pin head in size, which upon microscopical examination show pus cells and fatty detritus. Stained smears show tubercle bacilli as dense collections among these cells. In examining urine for tubercle bacilli we should guard against mistaking them for the sinegma bacillus. The method of Findley will overcome the difficulty of obtaining sputum in infants and young children. Holt, in sixty-seven cases of pulmonary tuberculosis in children under two years made the diagnosis from an examination of the sputum in 80 per cent. of the cases when, according to the physical signs, the disease was not far advanced. Many uninuclears are present in tuberculous exudates; the process is usually insidious in development and is accompanied by slight inflammation.

Cases of acute alcoholism are increasing among the soldiers who are spending the twilight of their lives in the National Homes for Veteran Volunteers, declares the daily *Times*. There has been an increase in all the States during the past year, the smallest being 13 per cent. at the Pacific Branch, the largest 91 per cent. at the Eastern Branch in Maine—a Prohibition State. In the first two-thirds of the present fiscal year offenses, largely due to drunkenness, increased by 1.576 (or 28.02 per cent.) over the last corresponding period. This is directly attributable to the act of the last session abolishing the beer halls or canteens in the Old Soldiers' Homes. The unanimous belief of army officers, based on accumulated data over a series of years concerning drunkenness, crime, immorality and desertions in the regular army, is that when the canteen went the spirit of temperance, of contentment and moderation went with it. In the vicinity of the Maine old soldiers' branch saloons (running despite the prohibition law) have doubled in number; pocket peddlers furtively dispense to the veterans "liquor of the vilest character;" and "the injurious effects upon those who drink it can hardly be estimated." Our lay namesake well observes that "the temperance workers have taken

a backward step in their measure. The canteen appropriation should be restored, both for the old soldiers and for the active regulars."

Teachers and Neurasthenia—Nervous breakdown is, it seems, exceedingly common among New York City's school teachers. Since the "Board of Retirement" came into existence three years ago 345 teachers have applied for the benefits of the retirement fund on the plea of service. Most of these faithful workers have served thirty years; and several more than half a century. Among these 345 neurasthenia claimed 124 applicants, heart disease 31, rheumatism 30, indigestion 15 and deafness 13. Since December 31, 1904, the fund for the payment of retired teachers has increased from \$907,924 to more than a million. There are 969 teachers on the roll, and their aggregate annuity is \$729,917, an average of \$754. For the last two years the teachers have contributed more than half the fund.

In the cutaneous hemorrhages in children Hecht (*Jahrb. F. Kinderheilkunde*) finds that the vessels may be demonstrated (by means of graded suction experiments) as more or less friable, according to the age and the region of the body. Venous congestion favors the occurrence of cutaneous hemorrhages only through the increase of the capillary blood pressure. The hemorrhagic diseases may be demonstrated as favoring the occurrence of hemorrhages, especially in the legs. Scarlet fever enduring over a week predisposes to these hemorrhages, whereas other scarlatiniform exanthemata do not present this phenomenon as constantly and severely, nor for more than a few days. Measles are associated with a certain vascular friability, depending upon the efflorescences, up to the time of pigmentation; whereas this is not true for rubella. For diphtheria there is a distinct diminution in the resistance of the cutaneous vascular walls.

Dysentery is divided by F. M. Sandwith (*Lancet*, Dec. 7, 1907), into two forms—the bacillary and the amebic. In the bacillary form the first thing to do is to cleanse out the bowel with castor oil or magnesium. Rest in bed should follow, with warm clothing, hot water bottle or a pad of cotton wool on the abdomen surrounded by a flannel bandage. Physiological rest for the intestines must be obtained, so far as possible, by stopping all solid food and giving only small quantities of liquid every two or three hours. When the tongue is fairly clean, boiled or sterilized milk, pure or diluted with rice water, or peptonized, is the best food. The daily examination of the stools, as in enteric fever, will indicate whether too much milk is taken, or whether we should peptonize it. When the tongue is thickly coated the patient loathes milk; chicken broth, albumin water, whey or rice water will then have to be given for a day or two. Alcohol will not help the dysentery and is bad for the liver; it should therefore be withheld unless the heart requires it. Brandy is in such circumstances the best stimulant. All food should be given tepid, neither hot nor cold; and even then a small, judicious meal may cause immediate peristalsis and an action of the bowels. To cure the patient we must treat dysentery as carefully as if it were enteric fever. Sandwith believes heartily in the serum treatment. In the amebic variety of dysentery we follow out the same plan of diet as in the bacillary form. We may give bismuth by the mouth, with

tannigen or some astringent added. Calomel is not indicated; sulphate of magnesium may be given alone, or combined with sodium sulphate. Rectal irrigations should be begun early; they are of great value. Solutions of quinine (1-500 or 1-1000), or of silver nitrate (1-1000), or sulphate of copper in the same strength may be used. "Many still rely on ipecac combined with opium."

Malignant Endocarditis.—Wadsworth (Medical Record) finds that this lesion develops on the injured endocardium as a secondary localization in the bacteriemia of infectious disease. Many species of bacteria may be present, but the pneumo-, strepto-, staphylo- or gonococcus is usually the exciting cause. The lesion may be associated with any infection; but chiefly with pneumonia or some form of sepsis. As a complication of previous disease malignant endocarditis is so serious and so often outlines or dominates the parent infection that it must be considered as a separate affection. The grave prognosis is due to the anatomical situation of the lesion. Rosenbach, Wyssokamitch and Prudden have demonstrated the importance of previous injury of the endocardium in determining the secondary localization of the heart infection, a fact important to both surgeon and physician in the prophylaxis of the disease. The lesions of the endocardium once freed of their mycotic nature tend to heal; so that recovery, when it occurs, differs in no essential way from infection in general.

Body Lice and Relapsing Fever.—J. P. Mackie (Brit. Med. Jour., Dec. 14, 1907), sets forth the features of an epidemic of relapsing fever in which the pediculus corporis were a causative factor. The epidemic broke out in a mixed settlement of boys and girls living under similar conditions. A very high percentage of the boys fell victims to the disease in the course of a few weeks; a much smaller percentage of girls fell ill and at infrequent intervals extending over three months. The boys differed from the girls in being infested with body lice from which the girls were almost wholly free. A well-marked percentage of the lice taken from the infected ward contained living and multiplying spirilla. The stomach of the louse was the chief seat of multiplication; and this was carried on notwithstanding active digestion, and after the disappearance of all other cellular elements. Other organs became secondarily infected. The secretion expressed from the mouths of infected lice contains many living spirilla, which existed also in the upper digestive tract. The ovary was frequently infected; but spirilla were not found in deposited ova. With the increase of the epidemic among the girls, body lice became more in evidence. With the subsidence of the epidemic among the boys the percentage of infected lice fell.

The Prostate in Affections of the Urinary Tract.—A. L. Wolbarst, "Am. Jour. Urology," finds that the prostate, though a sexual organ in health, is essentially a urinary organ in the diseased state. Urinary symptoms are most often directly due to prostatic disease. Any lesion of the prostate which increases its size, favors to a greater or lesser degree interference with the urinary stream. Inflammation

of the prostate is always accompanied by urinary symptoms; the genital symptoms are less marked. In cases of gonorrhœa the prostatic urethra is the most important of the urinary tract; it is the favorite seat of chronic urethritis; it is the medium one which the inflammation travels from the urinary to the genital tract. The prostate is solely responsible for the important urinary conditions which result as a consequence of its senile hypertrophy. Prostatic concretions may lodge in the bladder and act as the nucleus of larger vesicle calculi. Chronic contracture of the bladder neck, neuralgia of the prostatic urethra, prostatic tuberculosis, malignant prostatic disease, prostatic cysts and traunder of the organ, are all made evident by their effect on the urinary function. Lastly, these numerous urinary affections justify the consideration of the prostate as a urinary organ, second only to the kidneys in importance.

Sour Milk.—Nothing, states the New York Medical Journal, is older than curdled or sour milk; nothing seems newer than the application which has been made of it. Civilized people are the only ones to drink milk fresh or boiled; while fermented milk is almost the only kind that is used otherwise. The use and origin of curdled milk are older than history. The Greeks and Romans recognized the strengthening and tonic effects of sour milk; and they performed veritable cures with the special kind of curdled milk called "schiston." Today fermented milk is in common use as a diet in Eastern countries, in almost all of which, besides being used as a food, sour milk has played and still plays a great part in empirical medicine. "Sour milk, after being recognized as a wholesome food possessing medicinal properties, has been proclaimed by some people as a remedy for prolonging human life. (Will the Journal of the Pasteur Institute please copy?)

Attacks of Sleep.—Lezary and Montet (Rev. de Med., January, '08) describe two cases of girls, 8 and 15 years of age, who would suddenly drop off to sleep during the day, perhaps fifty times or more. The sleep would come on without prodrome; it would last a few moments; and the child would awake with a clear mind. The fear of danger or of punishment sometimes postponed the attacks. Bromides and the deprivation of salt had no effect; but marked improvement amounting to a seeming cure was obtained by means of isolation and psychotherapy. The older patient evidenced angioneurotic edema, and transient hysteric hemiplegia developed later. Both children were bright, and there was nothing otherwise to suggest epilepsy. Psychotherapy for children must be of the imperative type—"schoolmaster therapeutics," scolding, humiliating, punishing, appealing to pride, emphasizing faults.

Pemphigus Neonatorum.—Vorster (Fortschr. der Medizin) believes this to be a contagious disease, originating by infection with the staphylococcus aureus or albus, appearing in sporadic cases or in epidemics, and taking either a benign or a malignant course. Where streptococci participate in the infection, aside from the staphylococci, the character of the disease is grave and febrile from the start; whereas in the other cases fever is absent. Sometimes gangrene or hemorrhagic vesicles make their appearance. Dermatitis exfoliativa is a malignant disease belonging to the pemphigus group;

its relation to pemphigus neonatorum is that of pemphigus foliaceus to pemphigus vulgaris. Etiologically pemphigus neonatorum is closely related to impetigo contagiosa.

The Health of High School Children.—E. Jarrett (Med. Rec., April 11, 1908), has examined yearly from 800 to 1200 applicants, men and women between 18 and 25 years of age, the finished product of public school training, physical and intellectual. The tests were written, intellectual, oral, physical and of the personal equation. Seven per cent. were rejected for various conditions of disease that were likely soon to make them burdens on the payrolls; but as Jarrett proceeded she became amazed at the low standard of health among the younger groups of candidates from high schools, normal colleges and the College of the City of New York. Many cases of anemia, albuminuria and organic heart lesions were found. The reason for this seemed to lie largely in that these subjects came up for physical examination after the prolonged strain attendant upon school and college examinations. When the physical examination was so arranged as to precede the others Jarrett found that: A strain of even a few weeks may produce in these young people a temporary derangement; those with organisms sufficiently strong react immediately on removal of the strain; a small percentage have become by these means permanently injured in a vital organ.

The Calmette Test for tuberculosis has some important contraindications, as Baldwin has pointed out in the J. A. M. A., Dec. 14, 1907. It should not be used where there are diseases of the conjunctiva, lids and cornea (acute and chronic conjunctivitis, blepharitis, ulcers, trachoma); or any disease of the internal structures. Mere eyestrain from errors of refraction need not prevent its use; but undue exposure to dust, smoke or strong light should be avoided during the test. It should not be used when the diagnosis of tuberculosis is otherwise clear. No value is to be placed on a positive reaction in the absence of symptoms of tuberculosis which might require treatment. A reaction occurs as well in a long healed patient as in a recently developing, latent lymphatic or pulmonary case. This test might easily cause hypochondriasis in sensitive people.

Heart Diseases.—W. H. Porter sets forth in his usual authoritative way the important points to be considered in diagnosis; especially the recognition and correct interpretation of the cardiac murmurs, the anatomical position of the organ and its physiological mechanism. In frozen sections of the body the heart does not occupy the same position as in life. A murmur in the mitral region may be due to an organic narrowing of the bicuspid orifice; to an incompetency of this orifice; to a leakage at the aortic orifice, the regurgitating blood crowding one segment or the other of the bicuspid valve against the incoming current of blood; to a functional insufficiency of the valves. A murmur due to a leakage of the aortic valves will disappear when the physiological action of the heart is improved so that less and less blood regurgitates. A functional murmur will disappear under treatment which both restores the nerve energy and builds up the myocardium. Le-

sions of the valve segments will usually become progressive even though the general condition is improving. There is also a double set of murmurs at the aortic valve to be considered; those due to organic changes; those due to congenital perforations of the aortic and pulmonary valves; and the so-called haemic murmurs. Regurgitation from incomplete closure and that from congenital perforations give almost the same physical signs; the heart is, however, not enlarged in the latter. Clinical symptoms are absent in congenital perforation. The haemic murmurs disappear under proper treatment. Primary lesions of the right heart are seldom found; and are here not considered by Porter. Enlargement of the heart is determined by auscultatory percussion. Hypertrophy from degeneration is determined by auscultation and careful study of the muscular tone.

The death rate from tuberculosis has been reduced from 30 to 50 per cent. in every large city in the world since Koch's discovery in 1883. In New York city, though, the population has doubled since 1881, there are now no more deaths from this disease than there were then. In 1881 there were 6,123 deaths from consumption, as against 6,049 in 1901. In Greater New York alone there are nearly 10,000 less deaths yearly from consumption than there would be if the death rate were as great as when Koch made his epoch-making discovery. A vigorous campaign is now being conducted by the New York State Charities Aid Association in co-operation with the State Department of Health; and we have no doubt that, as the result of these and co-ordinate energies, every other city in the State will decrease its tuberculosis death rate to a degree corresponding to that achieved in the metropolis.

The Exploratory Incision.—C. A. L. Reed (Med. Standard, Feb., 1908), relates very cogently an experience in Tait's clinic. One case diagnosed to be a monocus of the ovary proved on paracentesis to be a hydronephrosis, caused by the angulation of the ureter, the result of displacement of the kidney; another case upon which no opinion was ventured proved to be a chylous cyst of the mesentery. It was Tait's opinion that the exploratory incision is a legitimate means of diagnosis; in his hands this was followed by "no mortality whatever." Many cases, declared this surgeon, have been permitted to develop fatal complications while going from one diagnostician to another to get a hair-splitting diagnosis of conditions, the absolute surgical character of which was obvious from the very start.

Spasmodic Croup.—Grove (Charlotte Med. Jour., Feb., 1908), administers bromides. He gives a baby up to a year old half-drachm doses of the elixir of sodium or potassium bromide every half hour in four times its volume of water, until the child is relaxed and quiet. Two or three doses usually suffice; after this doses need be given from two to four hours apart. For older children the dose is increased to from one to two drachms. With the giving of this drug, or more especially the day following, one or two warm baths are given in the morning and at bedtime. Calomel is indicated; a mustard draught to the abdomen for nausea. Aconite, ammonium carbonate and syrup of tolu are appropriate.

MISCELLANY

A Cure for Acromegaly Reported.—Hochenegg, of Vienna, is declared to have operated successfully in a case of acromegaly. The case was that of a young girl who prescribed the usual symptoms; the diagnosis is said to have been confirmed by means of X-rays. The nose was moved to one side, the cranial floor was entered and the tumor removed from the hypophysis. The difficulty of reaching the lesion has thus far precluded operation.

Antimony, a drug much used a century ago, has fallen into undeserved neglect, declares Eustace Smith (Brit. Med. Jour., Feb. 29, 1908), who advocates that the use of it be revived for catarrhal states of the mucous membranes (bronchial catarrh and bronchitis); the early stage of broncho-pneumonia in children; stridulous laryngitis; gastric derangements; hepatic disorders; chronic constipation with very hard dry stools; and eczema, both acute and chronic.

Tongue Tie.—The significance of this condition, states Ichleissner (Internat. Jour. Surg., April, 1908), is still much exaggerated even among physicians. In most cases there is simply a short frenulum, which prevents to a slight extent the movements of the tip of the tongue, but does not interfere with suckling nor later in life with speech. There is therefore no occasion to separate the adhesions in these cases; this operation is occasionally followed by troublesome hemorrhage.

Something New in Appendicitis.—T. Rousing (Centralb. f. Chir., Oct. 26, 1907) considers that pressure on the left side corresponding to McBurney's point will elicit the pain characteristic of appendicitis; this will not be found to obtain in other abdominal affections. Rousing has, by examining more than a hundred patients, confirmed the value of this indirect means of eliciting the pain at McBurney's point; it was found only in affections of the cecum or the appendix.

Winter diarrhoeas in infants are due to the ingestion of milk which has been frozen, states E. K. Shelmerdine (N. Y. Med. Jour., March 14, 1908). In such milk the casein collects in small particles which may be seen floating in the milk after it has been thawed out. These curds are carried undigested into the small intestine, while they decompose, thus furnishing food for the bacteria which consequently multiply in enormous numbers. Such curds should be removed by straining through cotton.

The Speed Law Violated.—Dr. Max Wolper, of New York city, having been telephoned for to see a child "who was being strangled by an ulcer in the throat," jumped into his automobile and picking up a colleague on the way hastened to the patient's house. They were arrested by a traffic squad policeman for overspeeding. In a few words the situation was explained and the policeman, instead of arresting the physicians, not only permitted them to proceed, but also trailed them to see that no other officer stopped them on their merciful errand.

Gargling has no advantage and has serious disadvantages for throat disinfection. Spraying is little better declares M. Young (Lancet, March 28,

1908). Swabbing and douching are the only reliable methods. Young considers medication by antiseptic lozenges an ideal form of treatment. (We cannot, however, see that treatment by lozenges will relieve a throat affection lower than the epiglottis, any more than gargling will. From the epiglottis the medication which is dissolved on the tongue passes down the oesophagus and not into the respiratory tract.)

The tonsil, believes B. H. Orndoff (Jour. Ind. State Med. Ass'n, March, 1908), has for its function the early establishment of immunity to bacterial toxins. Its location is most suitable for the certain collection of specimens of every kind of germ entering the oronasal region. When the bacteria have been in crypts long enough to elaborate a sufficient vaccine, which is transported by the lymph current through the system, an immunity not associated with a toxemia has been induced for that form of bacterium. This organism is then annihilated by bacteriological substances brought by the returning lymph current and is removed from the system.

The Health of East Indian Peoples.—If, observes Dr. C. F. Thwing (N. Y. Eve. Post), there be one element in which England could justly be happy it is her endeavor to promote the health of this people. "Plagues and the plague" she has sought to stamp out, and has largely succeeded. In this suppression she has built many hospitals. In one city in which a plague hospital was built, and to which the victims of the disease, to prevent its spreading were brought, the people got the idea that the English doctors were collecting these victims in order to send out the disease all over the country. Concentration, it was thought, meant dissipation of the evil.

The Calcium Salts are recommended by S. J. Pass (Med. Press and Circular, Sept. 4, 1907) in chilblains; 10 grains t.i.d. in a tumblersful of water; the iodide of calcium, 3 grains t.i.d. in ulcers of the leg; in epistaxis the chloride 15 grains twice daily; the chloride, 15 grains t.i.d. for three days in painless edema of the ankles. A perforation in syphilis of the hard palate healed under the iodide, 3 grains t.i.d. for two months. The chloride, 15 grains t.i.d., has been beneficial in menorrhagia, with epistaxis and erythema nodosum; good results were obtained in pneumonia with haemoptysis under the iodide, 3 grains t.i.d. for three days. If the drug nauseates, its dilution should be increased.

Tuberculous Coxitis.—Lannelongue (Internat. Jour. Surg., April, 1908), gives two rules for the treatment of tuberculous disease of the hip joint. 1, Rest in the horizontal position, with extension of the leg. The use of the plaster of Paris bandage should be avoided, since it impairs the mobility of the joint without exerting any influence upon the deformity. 2, In connection with extension the use of injections of iodoform, ether and creosote in an oily vehicle. The ether enables the substances to become diffused over the entire inner surface of the joint and to come in contact with the areas of granulation and ulceration. The iodoform is not a specific agent against the tubercle bacillus, but it is the best remedy for inhibiting its growth. The creosote favors fibrous tissue formation.

CEREBROSPINAL MENINGITIS FROM THE STANDPOINT OF PUBLIC HEALTH.

BY DR. CHARLES BOLDUAN,

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IN discussing this topic I shall confine my attention mainly to the experiences which we have had in New York. Some idea of the importance of this disease for the people of this city can be gained from a study of the following table showing the number of deaths caused by this disease in the former city of New York since 1866.

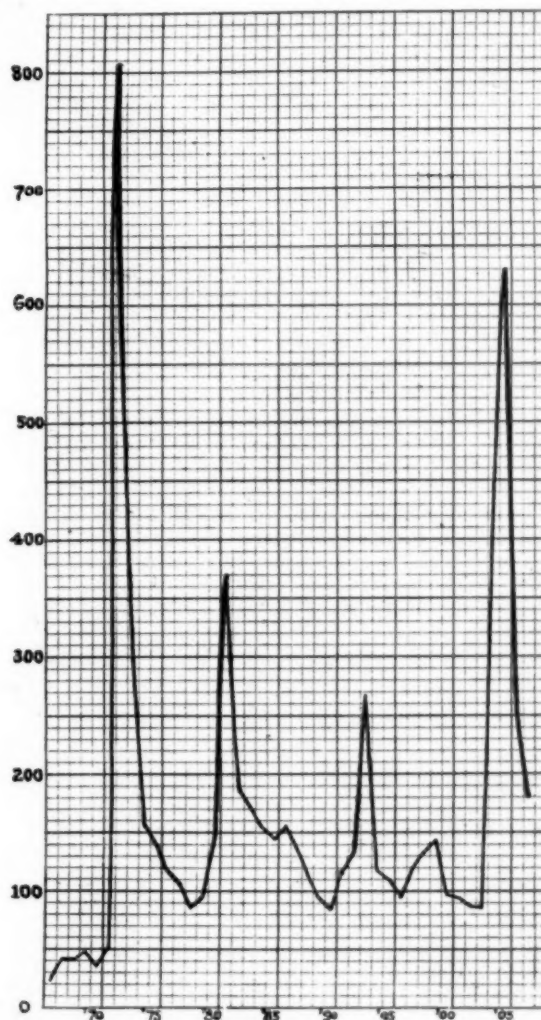
The following table gives the number of cases and deaths from cerebrospinal meningitis in the old city of New York (present boroughs Manhattan and Bronx), 1866 to 1907, inclusive:

Year.	Population.	Deaths C. S. M.	Rate per 10,000.
1866	767,979	18	.23
1867	808,489	33	.40
1868	851,137	34	.39
1869	896,034	42	.47
1870	943,300	32	.34
1871	955,921	48	.50
1872	968,710	782	8.07
1873	981,671	290	2.95
1874	1,030,607	158	1.53
1875	1,044,306	146	1.40
1876	1,075,532	127	1.18
1877	1,107,597	116	1.05
1878	1,140,617	97	.85
1879	1,174,621	108	.92
1880	1,209,196	170	1.41
1881	1,244,511	461	3.70
1882	1,288,857	238	1.86
1883	1,318,264	223	1.69
1884	1,356,764	210	1.55
1885	1,396,388	202	1.45
1886	1,437,170	223	1.55
1887	1,479,143	203	1.37
1888	1,522,341	173	1.14
1889	1,566,801	145	.93
1890	1,612,559	136	.84
1891	1,659,654	189	1.14
1892	1,708,124	230	1.35
1893	1,758,010	469	2.67
1894	1,809,353	213	1.18
1895	1,873,201	204	1.09
1896	1,906,139	178	.93
1897	1,940,553	232	1.20
1898	1,976,572	258	1.31
1899	2,014,330	287	1.42
1900	2,055,714	201	.97
1901	2,118,209	201	.94
1902	2,182,836	190	.87
1903	2,249,680	195	.86
1904	2,318,831	1,083	4.60
1905	2,390,382	1,511	6.30
1906	2,464,432	600	2.50
1907	2,541,084	471	1.80

Reproduced in the form of a curve it is seen that there have been four epidemic outbreaks in New York city in the past forty years, namely, in 1872, 1881, 1893 and in 1904-05. This cyclic recurrence of epidemic outbreaks has been noted by most writers on this disease, but no satisfactory explanation has yet been offered for the phenomenon.

One of the first requirements for successfully combating an infectious disease on the part of the public health authorities consists in promptly learning of the existence and location of every case of the disease. As soon, therefore, as the existence of an unusually large number of cases of cerebrospinal meningitis came to the knowledge of the Board of

Health, steps were at once taken to provide for the prompt reporting of all cases of the disease by the attending physicians. In return for such reports, the Department of Health placed the facilities of its diagnostic laboratory, its diagnosticians, and of trained men to perform lumbar puncture at the disposal of the attending physicians. It has been the experience of the Health Department that this always helps materially to secure full returns of the cases.



The total number of cases reported to the Department from Greater New York in 1905 was 2,755. In 2,180 of these some data were obtainable as to the history of the case. Out of these 2,180, 357 proved to be cases of mistaken diagnosis, over 100 of the 357 being cases of tuberculous meningitis, and 50 being simple meningitis. In about one-third of all the cases, lumbar puncture was performed, and in 82 per cent. of these, meningococci were found. It is interesting to note that out of 84 instances of meningitis supposed not to be of the epidemic cerebrospinal form, 12 proved to be cerebrospinal meningitis.

The reported cases were plotted on a large scale map of the city in order to observe whether there was any special grouping which would prove significant in studying the mode of spread of the disease. In the map which is here reproduced, you will see that there is a considerable grouping of the cases on the lower East Side (the ghetto), in the east Harlem district (Little Italy) and in the tenement district on the west side (San Juan Hill and Hell's Kitchen). On comparing this map with the density of population, however, it was found that the two went fairly well together. This confirms what other writers have said concerning the influence of close contact in spreading the disease.

In studying our spot map of cerebrospinal meningitis in 1905 I made careful note of the instances where there was more than one case in the same house, for I felt that a study of these cases would be most likely to shed some light on the transmission of the disease. Out of about 1,500 cases of the disease reported, there were over 250 belonging to this category. Lack of time prevented my studying more than 144 of these, and these occurred as follows:

39 instances with 2 cases to a house....	78 cases
15 instances with 3 cases to a house....	45 cases
2 instances with 4 cases to a house....	8 cases
1 instance with 5 cases to a house....	5 cases
1 instance with 8 cases to a house....	8 cases

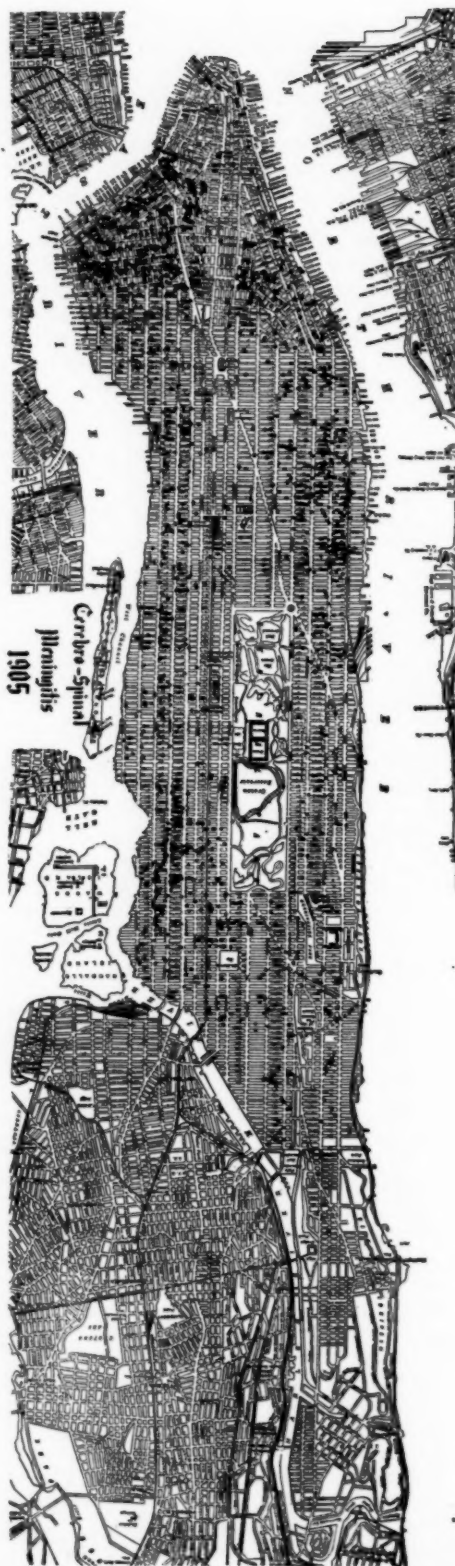
In a considerable number of instances there seemed little doubt that the subsequent case or cases had been infected from the earlier one. Before discussing the probable mode in which this transmission occurred, it will be well to review certain other points in connection with the disease.

As sanitarians we are concerned principally with the nature of the infecting micro-organism, with the probable mode of infection and with measures to prevent the disease.

The infecting micro-organism in cerebrospinal meningitis is, as you know, the diplococcus described by Weichselbaum in 1887. It is commonly spoken of as the meningococcus. Chief among its characteristics is its property of decolorizing when treated according to the staining method devised by Gram; that is to say, it is Gram negative. It is important always to test this point when examining a smear from cerebrospinal fluid, for meningitis is also frequently associated with Gram positive organisms, such as the streptococcus, the pneumococcus, and sometimes the staphylococcus.

Another characteristic of the micro-organism which is important from our standpoint is its low vitality. The meningococcus is readily killed by exposure to sunlight, by drying, and by other mild destructive agents. Hence it is extremely improbable that the organism lives in dust, or that infection occurs in this way.

All who have studied the disease agree that the occurrence of cerebrospinal meningitis goes hand in hand with close contact between persons. Thus the disease has often occurred among soldiers and then has frequently remained localized to particular companies or regiments. Since it has often been impossible to establish a direct connection between the occurrence of the various cases, it has been thought that infection might be carried by vermin. Careful



studies, however, have shown that this is extremely improbable. In some of the epidemics which have been reported the disease was limited to the better quarters of the city and occurred among people in whom vermin did not occur. In order for this mode of infection to play a role, we should expect the meningococcus to be found quite regularly in the blood of the patient, and this is not the case. The work of Elser, of this city, showed that the organism can be isolated from the blood in about 25 per cent. of the cases, but the occurrence is not at all regular, and the number of organisms is very small. So far as transmission by mosquitoes or flies is concerned it will suffice to say that the disease occurs at seasons when these do not abound. A few observers have stated that the occurrence of the disease appeared to be related to outbreaks of peculiar epizootics (in horses, fowls, etc.). This mode of transmission is not borne out by the experiences of most other observers, and certainly played no part in the epidemic in New York in 1904-5.

We know that the meningococcus occurs in the meningeal exudate of the brain and cord, and that it is found in small numbers in the blood. But how should it get from these deep seated locations into the body of another person? Soon after the discovery of the meningococcus a number of observers reported finding the organism in stained smear preparations of the nasal mucus both of patients suffering from the disease and in normal individuals. After a time, however, these observations were entirely discredited because cultural examinations showed that the organisms were frequently not meningococci. Within recent years, however, renewed study of nasal cultures showed that the meningococcus does occur in the nose of patients suffering from the disease. During the epidemic of 1905 I had abundant opportunity to investigate this question. On my trips to the various cases I carried sterile swabs such as are used by the Department of Health in its diphtheria outfits. Cultures were made from the nasal fossæ of patients, of persons in close contact with them, and from a large number of persons who were not in any known contact with the disease. The results of these investigations were as follows:

Of the patients, those examined during the first week of the disease showed meningococci in the cultures from the nose in 50 per cent. of the cases. Some of these were almost pure cultures. In 150 contacts examined, meningococci were isolated in 10 per cent.; and in 150 normal persons not in contact with the disease we were unable to find meningococci at any time. It is hardly necessary to add that the resulting cultures were carefully tested by all known reactions, including the agglutination tests, and were positively identified as meningococci. The findings would perhaps have been still higher if we had made repeated examinations in all of the patients.

For the present, therefore, we must consider that the disease is transmitted by means of the nasal discharges, and that our prophylaxis must be directed to this source. In general, then, a case of cerebrospinal meningitis should be handled very much like one of diphtheria. The patient should be quarantined, other children in the family should be kept

from school, there should be as few attendants on the patient as possible and these should take the usual precautions observed in diphtheria. The nasal and other discharges should be carefully disinfected, the bedding and clothing should be soaked in disinfectant solutions before laundering, and on the termination of the case the apartment should be cleaned and disinfected. Antiseptic nasal sprays are indicated for the patient and for the attendants.

It is not advisable to treat cases of this disease in the general wards of a hospital. To be sure, ward or hospital infections are very rare, but after what has been said regarding the occurrence of the meningococcus, and in view of the probability of transmission of the disease by means of nasal discharges, it will be wiser to treat such cases in a special ward or pavilion.

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WHO ARE THE SANE?

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IN medicine we are next to nobody if we do not analytically study the operations of habitual eccentricities, whims, mental types or characteristics of individuals, trends and breaks of the reasoning process which gradually stamp upon the intellect an abnormal dent or curve, and which therefore deflects periodically, perhaps permanently the mental balance so valuable to us all as a human heritage. The writer is not posing here as a razzle-dazzle expounder of muddy shades between insanity, lunacy, idiocy, illusions, delusions; but I simply propose to dwell awhile on mental aberrations, or melancholias, or dementia manifestations that I have met in my own private practice, and that are liable to spontaneously cross the path of any general practitioner any day. Furthermore, most of the cases may be successfully cured at home by patient exercise of calm common sense if the doctor is not ground to powder by the millstones of excessive reading and cramming with artificial and arbitrary theories. Because of a sensitive aversion to a scientific study of insanity in general, I have never read any published text book on that unhappy subject. "The Anatomy of Melancholy," that marvelous classic by Robert Burton, born A. D. 1576, has stood fifteen years upon one of my book shelves, and with the book's 739 pages yet uncut and unread because of its voluminous contents and fine print from which my eyes and limits of time have always beat a retreat to postponed opportunity.

It has seemed to my mind that the man who filled his mental zone with the vagaries of dementia was especially prone to color things "queer" in the functioning processes of his own brain, and I preferred to leave his think to his own choice of thinking, but allow instead the intuitions of common understanding to be my own guide. If we dare not speak from experience, we should not speak at all. After nearly fifty years of close professional observation I have about concluded that, like any other outfit of complicated machinery, the working functions of the brain may become defective, yield to aberrations similar to the deranged action of the stomach, the liver,

the intestines, or other organs. Why not? I doubt that the designated differences in mania depend on physical differences of gearing in the brain, or has been proven as such by dissections. A mind sick is a mind demented, whether it grovel in the green slime of jealousy, revel in revengeful crave for bloodshed, or brood over the croaking morass of despondency. The fluctuating margins between the estate of sanity and the bogland of delusions is believed by many to be so narrow that only a step may cross the boundary to and fro, and that guaged by scarcely more provocation than unguarded emotions and impulse which ravel out the integrity of ordinary mentality and make of it a comparative relic disrobed of reliable service. As I take it, there is nothing in human experience that should be so effectually safeguarded as are the easy gates that swing between the borders of level mentality, the normal capacities of the thinking organ, and the erratic vagaries of disordered imagination—whereon desperation these later years too often sets the seal of criminal excuse. Semblances or shades of aberration may be catered and groomed into effectiveness sufficient, in weak minds, to fit the soil of temper and temperament to produce insane acts. The case of Harry Thaw seems to be mainly of this stamp. Sane at will—insane at convenience. Like the whiskey dabbler makes excessive resort to the crazing intoxicant to spur him to a demented deed perhaps long contemplated aforetime. In the court room his attorney pleads that his client was suffering from the delirium of intoxication, and hence irresponsible! A clever mode of serving the devil!

The human brain is a cultivable organ, for the better, for the worse. Habit of thought indulged in shapes the growth, develops the product of either healthful or disordered intellection. Will-power on one side, or passive misdirection on the other measure the outcome of results. Too many people "go crazy" because of their lack of resisting sand. The mortar of their brain energies is mixed with dust and electrified with the phosphorescent flash of sheer touchiness. Unless the elements of faith, hope and charity are cultivated and welded into an anchor of protective code of reasoning, mental decadence grows its moss over the faculties that ornament the most valuable possession in life—a level head. There are clever, facile, gifted but hypersensitive beings, who are appreciative and appreciated to large degree, but who do not withstand the bluff of reverses, the bruise of grief, the goad of disappointment, the sting of reproach, the gnaw of remorse. Flexibly they bend and beget the mold of melancholia. Forsaken by the virility of courage, smitten with the recoil of mental impotence, they slump into the slough of despair, even yield to the cowardice of self-destruction. I do not believe, as many do, that the tragic finality arrived at spells dementia. It is more like the unresisted yielding to disconcerting circumstances. In bogus cases, where the impulse to murder another is contemplated and matured by nursing a sense of jealousy, or anger, or revenge, and the malicious deed is executed under the convenient spur of humored exasperation, the flash of fiery passion, or the climax of favoring opportunity, the modern vogue of excusing the crime behind the claim that the crime is the result of insanity is a bald insult to

decent reason, and to the recognition of justice that represents protection to humanity. In these days of evil designs the desperate coaching of terrible sin under the mask of insanity is becoming the watered stock in the despicable practice of seeking the lives of others, and then escaping deserved punishment.

It is quite probable that stability of mental faculties relatively depend on firmness or stableness of brain cells in the carrying on of their normal functions. It is impossible to admit that the physical organization of the reasoning organ or brain is of the same quality in every person. As the texture of the skin, for instance, differs in softness, smoothness, clearness, oiliness, dryness, elasticity, firmness in different persons, why not expect corresponding variations, unseen but understood, in the functioning organs of the intellection? Habits of thought, of exaggeration, of depressive worries become constituents of the brain temperament if allowed loose rein at the expense of watchful reason and normal developments. So, then, between brain qualities and trends of thoughts habitually indulged, there is found the safe highway of healthful mental endurance amid the abrasions and strains of events incident to human experience in life. We all admit that capacities differ with individuals, and these degrees of difference always deserve considerate recognition, should be accorded the shield of protection from the beginnings of mental disaster. Overpressure of the brain with any set of ideas or expanse of undue enthusiasm, even though it be but the hot air of vanity or self-importance, or the toboggan rush of excessive ambition, may at a later day tilt the balance against sound reasoning. Sixteen years ago I knew a somewhat top-lofty man who became a subject of lunacy through excessive enthusiasm on the supposed wonderful advantages to be derived by men investing in life insurance enterprise, as a guaranty against future need. This man had been appointed a local managing agent for a new life insurance company which lived but a short business life itself.

Because of its special relations to spiritual conceptions, religious enthusiasm may lead to religious fanaticism and mania. The "Holy Ghosters" have recently exploited that distasteful fact to the disgust of sensible people. And within a few weeks the world has been shocked by the religious frenzy of a member of a cult in Pennsylvania calling themselves "The Church of God." This fanatic brutally stamped a beautiful little niece to death in order to get rid of a fancied demon or evil spirit that he madly imagined had possession of the innocent little girl, five years of age, a neurotic child who had symptoms of St. Vitus dance. This crazy monster claimed that he was called to this inhuman act by holy revelation! A sound mind in a sound body is a merciful benevolence worthy of devout gratitude. The unsound mind in the unsound body means the greatest misfortune met in human existence. Tender memories are not always happy. While personally shrinking from situations of insanity, I have never escaped the immediate interest that challenges the physician's ambition to administer aid and test his ability to reclaim the reasoning faculties of the patient before the gates of the madhouse shall open to another unfortunate. The mind and soul imprisoned amid clouds of despondency, haunted by visionary ghosts

of disordered imagination, present a hampered situation very unfavorable for the relief or cure of any form of mania by consigning the case to the depressing environment of hospitals for the demented. In individual cases where the mind has become muddled and unbalanced, I believe that happier results may be won through the wisdom and tact of the private attending physician who will strenuously strive to carry the patient to as favorable situation as possible at home. For the first time on paper I will here revert to varied experiences in my personal practice. My introduction to conditions of insanity was very abrupt, and resulted in the conviction that if a case of disordered mind be placed in an asylum among an assemblage of demented associates, all normal means of restoration is dispelled by the malaria of dementia that prevails in the common atmosphere of such institutions.

In the limits of my Civil War experience it so happened that the regiment with which I served as a medical officer was posted at Yorktown, Va., and confronted by troops under Confederate General Wise with headquarters at Williamsburg, Va. When Wise withdrew from Williamsburg, our regiment was advanced and camped in that vicinity. One pleasant Spring day I was officially notified that there was an insane asylum in the town of Williamsburg and which came under the care of medical officers on either side that happened to be in possession of that location. I was expected to visit officially this neutral institution. On my first visit the young resident superintendent gave cordial greeting, invited me to inspect the surroundings, after which he would show me through the building. In my glance about the grounds I met an interesting inmate who proved to have previously been a practicing physician. The weather was extremely warm for that climate. This gentleman sat aloof upon a bench beneath a shade-tree, and muffled to the ears in a heavy cavalry overcoat. When I saluted him he gave me rather reticent notice, but spoke of his professional days. His fastidious conceits were apparent at once, and perhaps could account for the climax that led to the asylum. I took occasion to revert to the heat of the weather, asked if he did not think he might feel more comfortable without such heavy overcoat in hot weather? Instantly drawing himself backward as if I had intruded on his private affair, he replied that since he was comfortable in the way he was dressed, he by no means should dispense with the great coat!

Observing a group in the rear yard of the asylum, it was opportune for me to say "good-bye" and turn my steps toward the larger attraction. A company of about fifteen women of various ages, uncouth looks and raiment, had apparently watched my approach by peering between the palings of the high fence. Fearlessly I opened a gate that was barred from the outside, and stepped toward them. When it was seen that I had come inside, the frowsy crowd, eager-eyed, haggard-featured, rushed about me with hands and arms savagely thrust toward me and imploring that I give them tobacco! For a minute it looked as though I might be torn to pieces in resentment if I failed to furnish the weed craved by these greedy, irrational creatures. Promising diplomatically that I would go at once and send them a nice supply, I cautiously backed, step by step, toward

the gate through which I had entered the enclosure, and refastened it from the outside. I never again repeated that venture. The superintendent apologized for the occurrence; had supposed that these wild inmates had been returned to their quarters. On being conducted through the building I was taken to the room of its genius who was there guarding his invention through which he had gone insane—a complicated contrivance to demonstrate the puzzle of perpetual motion. Honored by a guest in army blue, he in lecture form at once began to explain the mysterious principles represented by the little wheels and the gearings of his fortuneless dreams.

Types of dementia are as variable as are types of individual environment and temperament. During the interval of my practice in the Pennsylvania anthracite region there arose a general religious revival in the borough where I lived. A miner of mid-age, an Englishman of staid and reserved habits, illiterate to the degree of general ignorance, but a consistent member of a Wesleyan church where they then preached more brimstone than we hear from the pulpit of late years. This man became profoundly impressed by the seriousness of the daily services, grew self-absorbed, morose, silent, as if pondering a mystery he was unable to solve. He attended all the night meetings, neglected his work or means of livelihood for family, spent much time upon his knees, went out at any hour of night into the nearby woods where he would be found kneeling in the snow beneath a tree and holding up his arms and hands in dumb appeal with his face lifted toward the sky. For years I had been his family physician. His worried wife, fearing that her husband had "gone crazy," appealed the case to me. I concluded that his brain had developed a phase of blank confusion in its reasoning process because of disability to solve the mysteries of eternal conditions beyond his present. If he could not be helped out of his perplexity, he would end up in an asylum. I concluded to turn substitute preacher in the crisis, and visited the tormented man. Explained that his mind made darkness for him because it was mixed up about a mystery that nobody could fully understand just yet—not even the preachers themselves. That I knew his chances for future safety were as good as anybody else's chances. That his mind was simply tired out and must take a rest-off from these puzzling subjects. That he would find that the Lord would be as good to him as to anybody, and would never hold him responsible for what he was not able to understand. That if he would stop going to these meetings, forget them as it were, but take up his regular work in the mines instead for a time, I believed it would please the Lord more, while it would also rest his head from its worry and let him get well as ever. The man seemed to grasp something promising in the idea as I was enabled to switch it across his gloom, and he promised to take up with my line of advice. But I did not stop at that. I sought his pastor, stated the situation, and earnestly urged that he join in my proposition for relieving this man's melancholia before it developed into settled mania. It was my point that these meetings would effect no benefit for this man in his present mental condition, hence, as pastor, insist that he refrain entirely from church services until after he got well again. The

pastor acted upon my advice. I only administered to my patient something to restore appetite, and to harmlessly promote ability to sleep. He resumed the tonic of his daily avocation. In a few weeks he was reported well.

After my removal to Philadelphia, I was called to a young married man who was in distressful state of what I will denominate mental neurasthenia. I have since quizzed my own thought whether excess of connubial privilege took pre-empted claim on his cerebral functions. At that time I was too conservative to unveil situations proper for investigation. I found the man in bed, debilitated, suffering acute tension of nervous excitement, thin in flesh, unable to sleep, alert with constant dread, watchful with anxiety and moaning the doleful plaint: "I'm lost! I'm lost! I've insulted the Holy Ghost and can never be forgiven! I know I'm lost!" It was sad to see a young man so enveloped in the shroud of religious melancholy that he was incapacitated to exercise rational hope. I began by administering appropriate nervines and tonics. Endeavored to press to his attention that he was only in a temporary state of nervous depression; that his system was run down; that his imagination had become saturated with the blues which obscured his spiritual zone; that he was only self-accusing himself; if he would generously cease to distrust the Holy Spirit or in other words the religious comfort of good will to all, take the remedies to help restore body and mind, his thoughts would soon again become normal and he would be as happy as ever. He argued he feared it was then too late. But I confidently stood by my position. Urged him to let up on his chain of uncomfortable thoughts, which were, I assured him, thoughts only; assist his good wife and myself to see him set upon his feet as a healthy man, trust all else to the good luck that then would follow. The contest wavered day by day for about a week; but decrease of dread and increase of restfulness growing. He gathered nerve, encouraged himself to take food and sleep. Then one morning he greeted me cordially, though yet in bed: "Ah, doctor, I'm better! I'll get well now! My pastor was here last evening—I'm a saved man! I'll get well!" And so he did. In various cases of melancholia it is probable that there has occurred auto-poisoning of the brain, auto-derangement of thought through lack of free evacuations of the bowel contents daily. Toxic offenses, degenerate waste matters, too long retained in the intestines, are reabsorbed into the circulation and vitiate not only the system in general, but more sensitively the brain, upon the health of which must depend the tone and quality of thought. Repeated aperient dosages, preferably of antiseptic salines, are proficient aids in clearing muddled heads and mental aberrations. In most of such cases, the doctor who systematically administers a routine of cleansing physic will excel in judgment the man who turns to narcotic drugs only to still mental disquiet.

Next I glance at a more difficult case. Miss P. was about thirty-six. She had been ill with a state of exhaustion for about a week. The house was unsanitary. A little grocery including vegetable green stuffs downstairs. Small rooms upstairs. Intensely warm weather. Patient lay in room where glare of sun upon the wall made afternoons and nights like

oven. Patient's pulse thin, quick, nervous, characteristic of intense apprehension. She had ceased to reason rationally, as if bound fast in hopeless depression. While not considered raving, her one repeated plaint day and night was: "I'm going to die! I'm going to die! That's ringing in my ears every moment—I'm going to die!" Though unsettled in her reason we did not consider the patient insane. As physician, I did not consider that the young woman was hearing the fatal notes of a last call. I began to treat her simply for nerves and exhaustion. To this I continued to add encouragement to try to remember that the warning that was ringing in her ears was not real, but was only a delusion that would soon pass away. That it had been a thought of her own which had started this alarm which her nerves had not shaken off. She gradually yielded confidence to my way of reasoning for her. For her anemia I gave tonics with iron; digestives for her absence of appetite; the valerianates for nervous disquiet, aperients to keep bowels cleared; abundance of fresh air in room; the refreshment of foods that she could relish; and none except cheerful talk allowed in her hearing. In less than two weeks she was convalescent and again herself.

A more painful case and of longer duration came later. A young lady teacher, handsome, of very intelligent parentage, perhaps she was seventeen, ambitious to a consuming degree, had been excessive novel reader, well posted in current literary matters, frequent patronizer of opera and drama, esthetic to vanishing point of endurance, done to the limit on brain feast and fodder, but eventually completely unhorsed by nervous prostration and the raven of dementia. As I had been the family physician from her childhood days, I enjoyed her confidence. Of exceptionally high-strung nervous temperament, she had become restless, roamed the house from room to room with rambling, disjointed talk of fretful and querulous import. She would burst pathetically into tears at a word or a thought and refuse to be consoled. At this juncture I was sent for. When she entered the room where I waited for her, child-like, she hastened to me, dropped upon my knee, and gazing into my face in most appealing way she exclaimed: "Doctor! Doctor! I want to find God! Can you help me find God?" It was a perplexing break, but, thanks to my early training, I managed to answer: "Yes, my child, you certainly can find your desire if you do not allow yourself to give way to emotion and excitement." At once she wanted proof. "But how can you help me to find God?" she clinched, and forced my capacity to satisfy her disordered mind into a complex dilemma. For a half hour I fenced with all the gentle logic that I could then command, but before I prescribed for her medicinally I was convinced that the girl was temporarily demented. Deferentially I suggested hysteria to the mother on the ground that the intellectual daughter's menses were not well developed and habitually tardy. With a certain dignified reticence the mother rather discounted this view, evidently because of its delicacy, but insisting that the daughter had broken down through overwork in endeavoring to prepare a school class for examination and promotion. This information threw some practical light ahead. When I added that there might be an element of spiritual

confusion that had preyed on the daughter's mind, the mother replied that it was improbable; and that the patient had previously shown no obscurity on religious comprehension, but that a serious and emphatic talk by the mother in regard to the family habit of breaking the Sabbath by spending the day in cooking and feasting which must be stopped, seemed for several days to exercise her daughter's thoughts. For fully a month I labored with this case. During that time there were repeated ravings and little rest at night. It was only at short intervals that she would seem herself. There were times when she manifested signs of desperation. Threatened leap from window. Had to be watched day and night. Was kept in one room. Had trained nurse who also gave massage. I went through the form of administering the phosphates, bromides at bedtime, valerianate of ammonia in elixir form, iron tonics, aperients, common doctoring in general skillfully applied. No narcotics to make matters worse. Everything to eat that she would take. Cheerfulness in her room and no allusions to herself. An erotic phase would sometimes hint its existence. I told the mother that because of certain impressions that might haunt the daughter's dreams in the crisis I should not visit her alone in the room. On one occasion she rushed after me as I was leaving and threw herself prostrate over several stair steps at head of stairs to prevent me leaving her. On the seventeenth day after my first call there began signs of relief from the mania. A moderate response to gentle emmenagogue remedies began to appear. Her mind gradually grew calm, and inside of ten days more she behaved like a sane patient. Soon after that her sister began to take her out for air and diversion. The family was strictly enjoined to never make the slightest allusion to any circumstance connected with this daughter's mental upset, but if asked anything by the patient, turn the matter aside by merely saying that the doctor said it was only a spell of nervous prostration. In reasonable time she resumed her professional work.

Miss Blank, aged about twenty-four, of good family stock, father and mother deceased, lived with her two sisters on income, of genial and passive disposition, had leisure time and spent part of it with a married lady friend in a suburban location. This friend was one of the soaring transcendental sort devoted to mysticisms. Our passive young woman became infatuated with the influences of her idealizing friend and was in measure a disciple of metaphysical effort. It was presently apparent that the young woman's mind had gone awry. She grew reserved and silent as if in a sphere of reverie. Stayed awake of nights, declined food, lost flesh. I was called. Found her debilitated, remained preferably in bed, paid indifferent attention to my efforts to engage her reasoning faculties, seemed to exist in a far-away world, declined nourishment and seldom spoke. Medicinal treatment was difficult because of her resistance. Change of air was recommended, and she was removed to comfortable seashore accommodations, located on second floor, accompanied by a brother and the sisters. I visited her there—called because of a crisis. A professional nurse had been employed to take principle charge, and at night relieve the friends of their care. One night the patient lay as if

in calm sleep. The nurse left the room about five minutes for a pitcher of water. On returning, a window was up and the patient gone. The nurse rushed to the open window, saw no one upon the ground below; she then gave the alarm by rousing the relatives; speedy search was started. It was moonlight, and half way on the road to the ocean was discerned the white gowned figure nearing the beach. She was rescued and returned to her room—somewhat bruised but not otherwise injured. But the proprietor promptly required that the young woman be removed. By my advice she was brought back to the city. Arrangements were then made to place her in a sanitarium out of town where she might be under systematic management and care. This case could not be wisely cared for at home. No man resided in the house with the sisters. At the sanitarium improvement was hoped for. But she remained sullen and silent. Her food was practically forced down her to prevent starvation. While under my care the only medicine that did her service was full doses of hydrate of chloral that induced intervals of quiet sleep. I do not think she was relieved though she lived several years. When her brain had yielded under pressure of grasping for mysteries, her mentality wrecked.

We will glance next at a peculiar case in which the result was more fortunate. On a hot July day I delivered a young widow of twins. Her husband had then recently met his death by accident. One of these children was "still born;" the other came with normal vitality and bid well to live and was quite a lad when last I saw him. Seven years after her accouchement was again called to this woman, then living with a sister. I interpreted the case as one of grippe of ordinary type. Before convalescence was quite established, nightly aberrations worried her friends and either a complication of fever or disordered mentality seemed to arrest her progress to getting well. At the close of each day she was improved. But her nights would be wakeful, and next morning found her worse, with low spirits, marked roaming of thought, wild talk. Each day her hallucinations took on some new phase or hobby. Was giving her mild tonics and a sedative at night to promote quiet. One day when I visited her she was up, dressed, bed made, and was sitting at its side. I was glad to see such improvement. But she immediately drew my attention to the white counterpane on which she had arranged bonnets, ribbons, bits of lace and other feminine keepings. She invited me to admire this display of fine little children that lay so pretty and good upon the bed in any way that she placed them. She insisted that certain ones were boys, others the girls. She had greeted me cheerily, but at once I knew that she was on the borderland of dementia. As cerebral sedatives, the bromides, then in vogue, nor valerian, or gelsemium had effected normal results. The sister followed me out, stated that it was queer that the patient seemed so excited at times, then again so depressed, was becoming afraid she would become violent and resort to harm! At my next visit this sister's husband, who had remained at home to see me, was in waiting. He took me aside. "Doctor," he said earnestly, "I'll tell you why this woman don't get well! She practices self-abuse terribly there in her bed!" "How do you convince

yourself of that?" I asked. He then detailed that the night before he sat in the room an hour while his wife was engaged in the kitchen as usual. He had supposed that the patient was sleeping when he was suddenly roused by finding her in a violent agitation of eroticism by her own hand. When the orgasm had passed she lay panting and exhausted as after a spasm; and he believed that her secret excess had been so repeatedly that if not checked she would never get well. Being working people who needed release from any steady guardianship of the patient's propensity day or night, we arranged that she be removed to an asylum where she might be constantly under the moral restraint of surveillance. The therapeutic treatment pursued at the institution where she was admitted to assuage the furor libidis of this unbalanced woman eventually proved successful. Three months afterward she walked into my office one evening; in cheerful mood she affirmed she had gotten entirely well and had brought the money to settle bill for my share of attendance. She knew that she had been in an institution for special reason; but made no allusion to it nor referred to anything of which she had been cured.

The case of a wife now recurs to me. I had been her medical attendant for several years. She had been twice married. Her second husband grew distasteful to her because he would not show fondness for her children by her first husband. He was a street railway contractor, and in habit of managing workmen in bossy manner which made his ways bluff and uncultivated and caused him to seem to her more and more unattractive as compared with some other men. She thought he did not treat her with the gentle consideration that she learned to admire in other men. She began to believe that he had found a more interesting woman in harmony with his tastes. Because of her active ovarian temperament, she was rather risqué or outspoken in her conversation with a medical man of considerable acquaintance. Volunteered that she was of unusually amorous disposition which awakened regrets that her husband was out of harmony with her tastes. I advised her that I believed her husband was an industrious provider for her home, that his daily business of superintending coarse dull-minded workmen made the habit of coarse address to others, and she should encourage his interest in herself in every sensible way as his wife. Then she began to deplore his unfortunate influence over her three sons. I rejoined that they were old enough to make their own living and soon would have homes of their own. I suggested farther that she would presently be passing through what was understood as "change of life" or loss of menses, after which her warm desires about man sensually would abate and leave her less sensitive about the matter. As the months went on, however, she grew more suspicious. She would go a distance to where his work lay, to satisfy herself whether her husband was really there with his employees, or whether he set them to work and then went away to "have a good time" with some other woman. Again she would take a confidential woman friend for a foil, and start out like detective to centre of the city to watch corners, even peep under short swing-doors of fashionable saloons to see if she could find him under any "give-away" circumstances. She would

keep tab on his hours. If he came home at any late or unusual time, she would accuse him of some flirtation that had delayed him, but which had not happened. She fancied he spent too much time at a street car depot, and had a house rented from which she could observe through an alley whether or not he was there or away. She was ill on occasion. I was present when her husband came home. At once she began to spar at him about leaving her alone to enjoy himself elsewhere. I cautioned her that unless she would make it more agreeable at home, her husband would presently dispose himself to remain away if only for relief. Furthermore that if she continued to keep her mind full of jealous thoughts she would go insane on that unfortunate subject. But she grew worse. Unable longer to stand it, in less than two years later her husband had her cared for in an asylum for demented persons—where she died shortly after her menopause.

The divorce courts show us that because of the isolated obligations incident to legal ownership and personal possession by marriage between man and woman, there often grow the thistles of jealous suspicion and unrest. The cultivation of supreme confidence is allowed to run to weeds in the fallow-ground of connubial trust. In other words the seeming monotony of much half-hearted married life, bulwark of social morals that marriage is intended to be, frequently reduces the higher estimates of love between the sexes to shallow shoals of connubial discontent and distrust. Therefore, whatever has been the habit of mind, the coloring of thought in the saner days is the more prone to bristle repulsively without blush or hiding if the intellection weaken, or the demented mind grievously exploit its magazine of family detraction. This fact above all perhaps should constrain married pairs, whether of short or long duration, to so control and to cultivate the regardful habit of consideration for each other's domestic reputation despite all satanic suggestions of what is termed "infidelity," so that in event the mind weakens to dementia in any measure from any cause, there will be no hidden explosive of domestic censure that savors of family disloyalty—exposed by the fester of jealousy. The true husband will defend the reputation of even an erring wife; the true wife will prove her faith in him by protecting the reputation of even an accused husband who may have yielded to the misdirection of some special temptation of the sexual impulses. The seal on the marital bond spells "for better or for worse"—which means that if it be "for worse" on the part of one party to the contract, then the other party shall not join in the cry of detraction, but prove faithful to the interests of the one whose human indiscretion brings occasion to test the province of marital love and faith. The wife of Henry Ward Beecher never rose to a plane of true wifehood so real and noble as when she stood unflinchingly loyal to her husband amid the burning assaults derogative to his moral reputation. A greater degree of home charity and sacrifice to patience on the innocent side, in defence of family honor, is a nobler code than that which flies on every occasion to the exposures and disgrace of the divorce courts. One of my most respected patrons one day gave me a surprise. He had grown weak-minded because of advanced years. His wife was a few years younger,

but much in bed with chronic illness. Sexual relations had died out between them. He had a bedroom by himself. He had always impressed me as a gentleman of refined intelligence and the highest type of courtesy. One day as I came out from the room of his sick wife he was waiting to escort me downstairs. He began to remark how queer and cold his wife had become towards him. Leading me into the front parlor, and pointing to the linen-covered chairs and sofas, he affirmed that all these were different people sitting there to wait their turn to go up to his wife for no moral purpose! Though he had for years been sexually impotent, when he became mentally imbecile, a store of hidden evil thought launched forward in applying to his old wife names and epithets improper for decent print. He died at home of acute pneumonia caused by severe exposure at night in snow storm and but half clothed.

The intimate relations between sexuality and jealousy and dementia set into frame a fundamental subject of great moment to doctors and to society. Whether the sexual system disposes many individuals to dementia, or whether the disposition to jealousy, or to sexual excess, tend most to dethrone the mental faculties. It was a very unique and unhappy case, yet on my hands, that suggested this paper. Existing circumstances, however, compel my review of this case to be postponed till a later number.

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WHAT DOES DISEASE MEAN?

BY HERMAN GASSER, M.D., PLATTEVILLE, WIS.

R OSENOW says: "It thus seems possible to extract from virulent pneumococci a substance on which virulence appears to depend, and for this substance the name 'virulin' is suggested."

Indeed, Ruediger and Davis on the same page of the Journal say: "The generalization may now be made that phagocytosis in representative forms of all the great group down to and including echinoderms, seems to be largely dependent on the presence of opsonins in the serum."

Allow me to suggest that the serum is the neutral field of battle, by, and through which it becomes possible to explain the biological law of the survival of the fittest cell, the reaction of which always and universally ends up in the neutral product of the serum. We welcome the new words opsonins and "virulin," because they equal a specialized expression of the still greater word—chemism—in which every term therein can be accounted for with mathematical accuracy until it rounds up so conservative an energy that is never more or less than the truth which alone is known in the unit of man's life.

In the same number of the Journal, H. Petit, of Paris, says: "More than a hundred cases in human beings have now been treated by injection of sterilized horse serum. Healing and cicatrization have been obtained, at once rapid and excellent, and cure has been obtained in desperate diseases."

This clearly illustrates what opsonins mean in the wealth of biological physics, the lesson of which has yet to be learned. We still border on its shores, and must first learn the true meaning of these terms, before it becomes possible for man to get even a crude

and primitive conception of the wonderful opportunities of unfolding truths that lie at the very door of man's knowledge, more than ripe for admission. Pathology is merely the reaction between the biological conflict of survival in the serum, that is the index of opsonins.

J. A. M. Ass., July 6, 1907, page 85.

If man's life is the unit of truth that equals the wealth of all this organized and established knowledge of the world's powerful system of lawful economy, then we at least have a standard of measure by which it becomes possible for him to trace his way back by the same system of lawful truth from which he came.

There are physical and biological diseases, the kingdom of which has become divided into two general branches, known as medicine and surgery. Every practitioner worthy of the name, knows that it is not within the range of possibility to make a well defined and clearly outlined distinction between these factors because they so dove-tail with one and the same law of truth which equals the power of all known economy that is limited to the unit of (man's) life by which it alone becomes known.

A splinter in the hand is a physio-biological disease which soon disappears if not infected by the secondary germs of staphylococcus or tetanic factors. The splinter is not disease, neither is life disease. It is the reaction between these two forces which we call disease. We are careful to bend every effort within the means of our living experience, to steer away from splinters, because we know they disturb the economy of ease. Even with these simple factors, it is easy to deduce that life is the unit of all known economy by which it becomes possible for man to rise higher and higher into the wealth of the world's powerful soul of living truth which leads the way of all known economy clear and inviolably, because every disturbance of pain or disease is a warning to lead and guide him along the better way of true economy.

All mankind to-day without exception bends every effort to win and come nearer to the light of one life. It is only a question between cause and effect that equals the same soul of truth as our image of life.

We know that a splinter in the hand, like the bullet which crashes through the brain, is a physico-biological system of lawful economy with all shades of variation. The splinter, like the bullet, is not disease. Indeed, man's normal life is not disease. He bends every effort to prevent and escape this system of painful economy to lead and guide the direction of all the means which become known by the wealth of his life so keen in the soul of his feelings; he knows it is the price of his being, by which alone it becomes possible to rise higher and higher; nearer and nearer to the throne of God's immortal living soul of truth in the system of lawful economy. No man has yet, or ever will find a flaw therein. I have no fear to stake my reputation on this simple truth. If one can find a flaw in the world's system of lawful economy that does not equal the soul of God's truth, then I am prepared to demonstrate that the conservation of energy is the most blighted and destructive truth that ever came into the scientific light of man's experience.

Disease is the most conservative and constructive power of lawful truth that exists in the world. If this was not true, then it would be impossible for man's soul of living truth to trace its way back along the system of his feeling, until it equals the lawful unit of his life as an effect. When we can prove that God's or the world's life is not the immortal cause of man's being, then what we call the conservation of energy, does not equal the light of his soul. All I ask is for one to show me an atom of truth that does not play a related part in the world's or God's powerful soul of living truth throughout all eternity. If this is within the range of possibility then I am prepared to demonstrate there is no cause, no effect, no system, no law, no truth. What is infinitely more, there is no soul that equals the immortal unit of life. All ends in the black and abysmal night of annihilation.

Man's life swings between the limits of pleasure and pain measured by the unit of his conscious feeling of soul or life as an effect. When he ceases to breathe, eat and drink in the world's dead "stuff" with lawful system of economy, then we feel justified in asking the question: Who created the dead?

There is at least a shade of difference between these extreme factors in this equation. Did man manufacture this after his own soul of feeling? If so, then there is a possible avenue of escape the reaction of which must end equal and opposite in relation from cause to effect, and effect back to cause. If the world's dead power of lawful truth can create man's life after its own image, then the problem in this equation equals the distance apart between these two creators. Let me briefly answer this by saying: The most simple truth in the world is life. God is the immortal unit, the greatest of all known truths, is the undeniable fact, but even God is limited to the power of soul. Disease is the measure of soul between cause and effect, God's and man's life, are alike equal to the same immortal unit of life.

Reginald H. Fitz says: "Disease is to be regarded as representing the result of a series of processes called morbid or pathological; from the fact that they are manifested by disturbances in the organism. Morbid processes, therefore, are to be considered as modified physiological processes tending to cause disease. All physiological processes are subject to certain variations which tend to produce disturbances in the functions of the body. In the healthy organism this tendency is checked by the automatic regulators of the functional activity of the various organs, to the importance of which Virchow long ago called attention."

"The process is never at a standstill. In the study of the morbid processes, therefore, one must appreciate the normal conditions and manifestations of life in the individual, and the latter must be submitted to the tests furnished by the former." (Peters Syt. of Med.)

This equals the expression of reaction which becomes so clear in the light of Dr. Fitz's soul, who without hesitation says: "All morbid and pathological processes must finally be submitted to the ultimate unit of his physiological experience." Is it not within the power of man to find a flaw in this great and valuable definition of disease, because the distance apart between cause and effect is measured by

the same unit of life.

In his late Glasgow address, Sir Frederick Treves carried this real and ideal problem of economical truth a step higher, when he said: "Man would not live, neither could he possibly exist, if there was no disease in the world." What he calls disease is the conscious soul of his feeling that ends up in the unit of his life that equals the soul of all his light as an effect. He has no hesitation in saying that disease measures the wealth of all known truth from cause to effect by the same eternal power, the unit of which begins and ends in the same unit of life.

Dr. L. Emmett Holt lately said: "Slowly but surely the superstition, prejudice and ignorance or half knowledge of the past are vanishing before the light of modern discovery, and almost before our eyes a new science is being evolved."

Every specialized department of organized knowledge has become saturated with a wealth of insoluble facts. It is our hope to carry this world problem a step higher, by means of lawful truth, up into the new light of soul, the power of which equals the immortal unit of God's living soul of powerful truth, to which even His light is limited. No man has yet or ever will find a flaw in the system of lawful economy that does not equal the conservative energy of God's soul of truth.

Dr. G. C. Savage in his paper on "The Duality of Man," winds up his article with these eloquent words: "Are you ready to ask me: What is man's spirit? My answer will be the question: What is matter? Answer me, and then I will answer you. This I know. When the mystic union is severed, the material part returns to the earth, from whence it came, and the spirit goes to God who gave it."

This is such a clear, pure, real and ideal illustration of the world's equation which becomes known in the unit of man's conscious soul of living truth; it equals a chemical formula in the making, of which every term will eventually be accounted for with an unerring mathematical accuracy, until it equals a demonstration. Indeed, man could not even ask this question, if God's life was not limited to the world's powerful soul of lawful truth in which each part, from the tiniest known atom up to God, plays a related function therein throughout all eternity. If the truth of an atom was more or less than a related truth of God's living soul of power, then the whole problem would end up in the night of annihilation, with not even a heap of black ashes to memorize its former state of existence.

Kelvin and Tait say: "Until we know thoroughly the nature of matter and the forces which produce its motions, it will be utterly impossible to submit to mathematical reasoning the exact conditions of any physical question."

If the world's system of lawful truth equals the conservation of energy, then man's conscious soul of life plays a related part in this immortal equation.

It is merely a question of organized system of relation between that can be measured by the law of atomic weight. An ounce of iron contains the same amount of force as an ounce of electricity or radium. The whole problem finally becomes resolved down to the organized and established specialized system of expenditure of energy after the law of atomic weight. This is such an involved and complex prob-

lem it cannot be easily or readily explained. But, being true, it nevertheless becomes possible to give a crude and primitive illustration of what it really means by the examples of actual experience, the evidence of which no man will deny.

The skeletal living cell of our bony system plays equally a related part in the physiological chemistry of the sensitive cell of light in our retina. It all ends up as one whole soul of truth in the economy of which every term must finally equal the same eternal unit of life. It is only a question of organization.

From Hadrian, down through Copernicus and Galileo, by the way of Keppler, up to the light of Newton's brilliant achievement, it becomes possible to trace the subject back, step by step, until it ends up in the pure and ideal feeling of soul, which became known in the unit of their lives. Just as surely as one stone upon another builds the greatest temple, just so surely are we all builders of the immortal temple of the world's soul of truth, the unit of which begins and ends in God. It is more than enough to learn that even God's life is limited to the world's powerful soul of lawful truth, the light of which is so transcendently wonderful and unfathomable that it passes all our understanding. If this was not true, then disease would not exist in the world, because we can measure the wealth of God's soul by light of our soul, from cause to effect, and effect back to cause. What is infinitely more wonderful is that this world equation is never more or less than the same immortal unit of life. It is merely a question between these two creators of life. Does man really live in the Kingdom of God's Living Soul of Truth?

Let us make a short excursion along the route of these great builders of soul by following the immortal and brilliant light of Newton's soul. The wealth of his innermost feeling can only be deciphered by what follows in his wake. While we now know that the law of gravitation does not equal the size of mass as distance between the stars, nevertheless we also know it has laid the nebular foundation of the hypothesis of Laplace's soul, carried it a step higher into the wealth of his transfigurative conception, and honestly acknowledges the nebular hypothesis as the source of his soul.

Dalton, soon after, carried this idea of constructive soul into such an infinite wealth of his being that it caused him to say, even an atom equals the truth of his soul, and he called it a theory of atomic weight, the test of which even holds good in the higher law of physiological chemistry to-day. He is one of the purest children of nature. Even the world renowned geologist, Lyell, says: "There is no rock so old that it was not antedated by a still older rock." This equals the soul of his life.

Herbert Spencer, the greatest and most profound synthetic philosopher that ever existed, honestly confesses all ends up as an "unknown truth" measured by the immortal genius of his life as an effect that everywhere turns back the door of each specialized department of organized knowledge so clear into the infinitely greater cause of all known truth. I owe him an everlasting debt of gratitude for opening the route of so many ways before the door of which all mankind to-day ends stranded and knocks in vain on this door of matter.

Dr. Barker has lost the wealth of his soul in neurones which makes him blind. It is no wonder he cannot see, understand, or comprehend the wealth of the detailed system of lawful evidence that demonstrates there is a circulating system of nervous energy in the nervous system that equilibrates the universal law of all known economy into one soul of living truth more absolutely certain than the existence of the circulation of the blood, which is only a part of its related power of the economy.

As we are here engaged in the great study of biologic physics, let me make another and still more comprehensive quotation from Verworn's work of "General Physiology," to lay the foundation of what it is here intended to convey and portray, with all the simplicity possible with the means at our command.

"The claim for a vital force rests solely upon the fact that thus far it has not been possible to reduce certain vital phenomena to chemico-physical principles. Indeed, when the achievements of physiological research were summarized above, the discouraging fact became so apparent that the vital phenomena that have been explained are only the gross physical and chemical activities of the body, and that whenever the attempt has been made to show their deeper causes, unsolved problems have always opposed it. Bunge (94) asserts: 'The more we strive to investigate vital phenomena exhaustively in many directions and fundamentally, the more we come to perceive that events which we believed we could physically and chemically explain, are excessively intricate and for the present mock at mechanical explanation.'

"What an atom is, i. e., what matter endowed with energy is, the world formula does not explain. If we ask how we arrive at the conception of an atom, we find that we conceive it as an excessively small, indivisible, elementary part of a body, derived by continued division of the body; but if a body be continually divided, until its atoms are reached, nothing but body is obtained. But we obtain not the slightest information regarding the nature of the matter that is endowed with energy, i. e., that of which the physical world consists. Are there limits to our knowledge of nature? And if so, where do they lie? Here according to du Bois-Reymond we stand at one limit of our knowledge of nature. It would be of undoubted interest, if with our mental eye turned inward we could observe the cerebral mechanics of an arithmetical problem, like the mechanics of a calculating machine."

Man's life is the ideal unit. He personifies and epitomizes the world as a miniature effect; born, created, or evolved out of the world's cause. It is also absolutely certain that mankind, generally, bends every effort to ascertain the cause of life more and more. The rapid strides of modern scientific discoveries bear unquestioned and undeniable evidence that every detailed specialized discovery plays a related part in the whole unit of the world's lawful system of economical truth. Let me cast this world equation as it appears to me. The world lives. God is the immortal unit. The power of the universe equals the conservation of energy to which it is limited, that is never more or less than the soul of one life. This is the limit of man's knowledge as an effect born out of one cause of life.

ETIOLOGY.

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IN my several previous papers which have appeared in these columns I have considered remote causes of disease such as are inherent in heredity and environment; I would here conclude my consideration of etiology by dwelling somewhat upon the more important direct or exciting or immediate etiological factors.

There are some essential differences in the tissues and functions of the sexes. The female, being the more delicately fibred organism, is less fitted than the male to resist many exciting causes. These sexual differences become very marked at puberty, and continue so until the forty-fifth year at least. They are emphasized by education, domestic training, customs and occupations; moreover, the sexes when they are exposed as often happens, to like adverse conditions, suffer from widely diverse diseases. Males are more subject to gout, epilepsy, tetanus, diabetes, tabes, certain paralyses, vesical diseases and acute lung affections; some of these tendencies in the male are explained by occupations that involve hard labor and much exposure. Females are supposed to be ailing more than males; but they seem oftentimes to stand serious illnesses better.

With regard to operations they seem the more courageous. The observation of the famous surgeon Wood may be recalled; he was wont to encourage a frightened male patient before operation by telling him: "Now, my man, be a woman." Women tend more to nervous affections than do men; the menstrual function must always be considered in the etiology of their affections.

It is considered that more males are born than females. If this be so the average is certainly reversed in after life, by reason of the death-dealing accidents which men incur in the struggles of existence—injuries received while at work, sickness resulting from exposure to the elements, the fatalities of warfare and the like. Among the very poor, the miners, fishermen and the like in England it seems to be a thing of course that the men precede their wives to the grave.

At various periods in life certain tendencies are to be expected. We may define these periods—but not too arbitrarily, for some of us are old and susceptible to the diseases of advanced life at forty, whilst others are young at sixty. Children will suffer from acute catarrhal affections, from glandular and skin diseases, acute tuberculosis, cardiac inflammations; and from a variety of affections traceable to improper feeding, bad ventilation, overcrowding and to hereditary tendencies. The latter have a tendency to manifest themselves at adolescence—a most difficult and anxious period.

The aged are practically exempt from acute tuberculosis; and hereditary tendencies appear rarely in advanced age. Tabetic manifestations due to syphilis in early years may then appear. The very young and the very old are equally subject to bronchitis and pneumonia; and the mortality from these diseases at both periods is very great. In the young, however, the tendency to bronchial catarrh is gen-

erally associated with the like inflammation in other mucous membranes, especially in the intestinal tract; this condition is indicative of constitutional depression or hypotonia. On the other hand, in the aged the tendency to pulmonary catarrh is due to degenerative tissue changes, either in the upper air passages or in the lung parenchyma. In infancy the nervous system is rapidly developed; convulsive disorders are then to be expected.

As the child grows this spasmodic tendency decreases. The nervous system furnishes other examples of "epochal" diseases. From the fifth to the fifteenth year chorea may appear, especially among girls; anemia and chlorosis are possible with the coming of the menses. The climacteric on the other hand, is characterized by hysteria, melancholia and various other perturbations.

Rickets is essentially a disease of infancy and early childhood; but it is rare in these United States, except among immigrants. Our country is so relatively prosperous that the nutritional defects (consequent upon poor food) which induce rickets are rare among us.

Puberty brings with it a complete change, both mental and physical; so that the individual, if not very carefully watched and trained, deviates from even perfect health and becomes prone to serious disease. The organism at adolescence, especially among girls, cannot safely bear any undue tax upon it. The generative organs, of course, undergo the greatest change; and the whole constitution is altered in consequence. Girls at this time suffer from constipation and sleeplessness. They are apt to work too hard at school; and mischief is likely to result from this. Perversions of any organ or faculty may be started; and once begun they are apt to continue until a permanent predisposition to disease becomes established. The dreadful mortality from tuberculosis begins with adolescence, and continues up to the forty-fifth year.

Organic and tissue degenerations, as I have intimated, vary in the time of their appearance with the individual. They may generally be expected after the fortieth year; every patient should be guarded against them—especially arteriosclerosis. Every man over forty should know that extreme exercises and physical overexertion may have dire consequences. The extent to which these changes become manifest varies in each case with environment, habits, temperament, occupation and like influences. The sequelae of previous disease and the results of hereditary influences (possibly latent up to that time) may now be manifested through decided effects of exciting causes which have hitherto been successfully and easily withstood. Old age is a relative term. A man may show his age by his liability to be affected by trifles, by reason that his lungs have lost their elasticity, or his brain its equable circulation, or its heart its vigorous pulsations. In the afternoon of life the most pronounced degeneration is of the vascular system. Diseases of the large vessels (especially arteriosclerosis) and aneurisms (especially aortic) must be feared. "A man is as old as his arteries." Again tendencies which have long been dormant now manifest themselves; as in cancer, a disease of advanced life. The old succumb readily

to diseases which are the result of lowered vitality, such as pneumonia, and a variety of nervous affections which the vigorous can resist. Old men suffer greatly with vesicular affections and with prostatic difficulties.

I do not believe that the effects of climate upon the individual are nearly enough appreciated. The book of Dexter is here excellent and most informing. And recently there has appeared Prof. R. De Courcy Ward's "Climate Considered Especially in Relation to Man." Prof. Ward's book is intended to be "read by any intelligent person, who has not had special or extended training in the technicalities of the science." The simpler divisions of the climatic zones as belts, more or less regular, extending around the earth, and the more elaborate subdivisions involving the contrasts of land and water, of lowlands and highlands, are extremely well presented. There is a large amount of information regarding diseases that depend closely upon climatic conditions; with chapters on the life of man as affected by tropical, temperate and polar climates.

Altitude, moisture, temperature, season and soil vitally affect the health. Those in mountainous regions who are unusually active suffer from overworked hearts and from hernias. "Mountain sickness" is rarely met with below level of 10,000 feet. Malaria and phthisis occur in almost inverse proportion to the height of a given district above the sea level. Cholera, typhoid and dysentery are most prevalent in valleys and plains. Moisture fosters the development of bronchitis and phthisis. Various endemic fevers prevail in the tropics; and are unknown in other parts of the world—principally because the bacteria are killed or rendered innocuous by lower temperatures. Tropical heat is essential to the spread of malaria and yellow fever; and it is an important factor in the production of cholera, tropical stomatitis, dysentery and liver affections. Then there is the "tropical wrath" developed in whites—a purely psychic phenomena due to the heat, which tends to the most dreadful cruelties and to the wildest excesses. Frost sometimes cuts short epidemics in the temperate zone. In certain regions particular organs become affected: the liver in the East Indies, the lungs and the kidneys in a capricious climate. Heat may kill suddenly, as in sunstroke; or it may produce cerebral mischief just short of death. Its effects are most marked in confined, ill-ventilated places. Long continued heat is most depressing to the vital powers; its sequelae in infancy and childhood are choleraic attacks—the summer complaints so fatal in the first years of life.

In the summer and autumn when the rainfall is most heavy, especially in southern regions, yellow fever, malaria and dengue are rife. These conditions are particularly congenial to the development of mosquito life. Lung diseases and diphtheria prevail in the early and the late winter, when the changes from mild weather to intense cold are sudden and pronounced. Nervous perturbations are in evidence mostly in the spring; the spring poem and the tender passion have then mostly to be contended with.

The influence of soil as regards disease is very great. The tendency to many diseases is markedly diminished wherever a proper system of drainage of soil water is carried out. Sandy and gravelly soils

readily drain themselves, are warm and dry; and are therefore most healthful. Clay soils are cold, damp and impermeable; and therefore likely to be unwholesome. Climates are also modified by trees, rocks, rivers, lakes and other physical conditions. Detritus carried down along the banks of streams is, like the decay of ground vegetation, a pernicious factor in many diseases—typhoid, malaria and the like; the upturnings of large tracts, with imperfect cultivation in the country, and the excavations of enormous lots in cities, bring about the same results. Certain districts bring about certain lesions—goitre in the Alps, cretinism in close valleys, urinary calculi in various regions in Scotland and England. Fog induces some affections; the English attribute no little of their alcoholism to this factor. As a general principle, those living in high altitudes are less vulnerable to disease than the inhabitants of lowlands, especially if the latter regions be marshy. Newcomers, again, are more susceptible to the epidemic diseases of any given district than are its natives. In short, climate may vitally affect the moral, physical and mental nature of human beings.

As regards the relative conditions in town and country. It has been said of all great cities that their populations would die out within several generations were it not for the fresh blood which is continually being fed them from the rural districts. This is not so true as it used to be for the reason that sanitary science (that babe in the family of sciences) has enormously increased the healthfulness of large cities. The lowest death rates seem now—in general terms—to obtain in rural districts; next most salubrious are the large cities; the least healthful all seem to be the small cities, which have not as yet so fully felt the effect of modern methods of urban sanitation.

The mortality in the country is thus less than that of towns; but the latter differ greatly in this regard from one another. There will be differences depending on the occupations, food and habits and customs of the people, and on their environments—as air, light drainage and the like. Drainage is, in cities as well as in the country, a most important factor; when imperfect it conduces to "damp walls" in dwellings. Vitiating atmospheres result, and these are ideal for disease propagation. In large towns occupations are more enervating than in country districts; whilst the physical and moral strain is greater and has fewer interruptions. Irregular hours, intemperance and prostitution are supposed to prevail in large towns; and they probably do. But cities by no means enjoy a monopoly in these factors making for disease. Probably they are maintained in large measure in cities through the patronage of the visiting "Reubens" anxious "to see life." It is said, and no doubt truly, that the vicious features of Paris life would disappear if they were not patronized and indulged in by visitors who are—well, not French people. It is more-over likely that in proportion to the population many rural districts contain more alcoholics than would be found in large cities. Moreover, besides the out and out drunkards there are many rural imbibers of "stomach bitters" (containing alcohol in large percentages), to a degree impossible of imitation by many city men.

In towns overcrowding checks ventilation to an

abominable degree; atmospheres become clouded with smoke and dust; and there is much intermingling of the sexes (especially among the very poor), so that because of these and like factors succeeding generations become stunted in their physical and psychic development and become prone to diseases which shorten the span of life. In the large cities, as I have observed, such evils have been splendidly combatted by sanitary regulations thoroughly enforced; so that in many respects the city folk are really healthier than those living in many a country district. Thus milk epidemics and typhoid fever epidemics in cities have repeatedly had their origin in isolated farms where the drainage and other conditions have been at fault.

The mortality among city infants and children remains far greater than in rural districts, especially as regards rickets, scrofula, tuberculosis and diarrhoeal diseases. Consumption is no doubt largely a city disease. Nevertheless this disease would seem to be very rife indeed in some rural districts—a seemingly incongruous state of things in regions inherently salubrious and where nature is beautiful and restful. Some reasons for the existence of tuberculosis in country districts are: the atrocious diet (to which such articles as rich meats and any meats indeed other than bacon are practically absolute strangers); intermarriages through several generations in families living within a radius of a few miles; the constipation habit, which obtains in the winter months, through disinclination to venture to out-houses in the severe cold. Food adulteration is, or has up to recently, been an evil in large communities affecting of all ages; on the other hand it is often alleged that city inhabitants enjoy most of the fresh meats, fruits, vegetables and milk, whereas country folk depend largely on canned foodstuffs.

Previous disease oftentimes is followed by the same or some other affection; so that when one is ill of an obscure disease a history of antecedent maladies is of the greatest assistance in diagnosis. Attacks of pneumonia are very apt to recur; worse still, they much too often lead to pulmonary tuberculosis. Pleurisy has to an even greater degree this sequel. Chorea, rheumatism, epilepsy and throat affections are apt to recur. Malarial attacks are most persistent, mainly because treatment of this disease is apt to be discontinued prematurely—as soon as the acute symptoms have subsided. Whooping cough is often followed by measles; not infrequently by consumption; chorea, rheumatism and scarlet fever may follow upon one another in individuals. Previous diseases may leave behind morbid conditions which remain in abeyance until excited to renewed activity by factors which the healthy individual could readily withstand. An affection of the liver may be followed by gallstones; and these may in turn cause peritonitis or some other abdominal lesion.

Slight complaints, because they receive little attention, are for that very reason more likely to affect the organism than serious diseases. On the other hand the infectious, as a general proposition, are likely to confer immunity upon the patient who survives an initial attack. Such is the case with small-pox, scarlet fever, typhus, pertussis, measles and the like. That is why the elderly seldom suffer from them, having been inoculated in youth.

I think that the effects of spiritual, mental and moral factors upon the organism are almost always underrated. One need but peruse the history of religious revivals to understand the effects of intense and inordinate religious excitement upon the economy, effects generally induced by imitative influences—the contortions, convulsions, “barkings” and the like, with the consequent physical exhaustion. Religion is a good thing; but it is not good for a man or a woman to be “drunk with God.” Bad news may cause sudden death; a sudden shock, such as fright, has certainly turned hair white in a few hours. Lesser perturbations may interfere with the functions of various organs. Sudden mental aberration may excite an abnormal rhythm in a heart. It is in everyone's experience that nervous disturbances destroy appetite and digestion, and affect the secretory and excretory functions.

Overwork predisposes to disease. Mental overwork may induce dangerous or even fatal symptoms, probably by cerebral hyperemia. It has been noted that among animals such diseases as anthrax and glanders attack especially those which are overworked. Excessive muscular action leads to infection, either by diminishing resistance to surrounding germs or by permitting the development of such as have already secured an implantation in some part of the body. The fatigues imposed upon troops lead to the development of various infections—typhoid fever, tuberculosis and the like. Students of medicine, nurses and practitioners are remarkably free from the infections to which they are daily exposed, except when they are weakened by fatigue. Overexertion may cause hernia, hemorrhages, ruptures of heart valves. Voice-straining may lead to pharyngitis and laryngitis. Syncope, sometimes fatal, has occurred in the very healthy from violent exertion in hill climbing, in boat racing, walking and running matches; thus are produced cardiac affections ranging from “irritable heart” to irremediable dilatation.

Various forms of direct injury are frequent causes of disease. Such are mechanical agencies, which produce lacerations, wounds, contusions and like injuries. Traumatisms induce disease either by exciting nervous reactions or by favoring the development of infections.

Poisons, whether solid particles inhaled, or liquid or gaseous, or whether of animal, vegetable or inorganic origin, may kill quickly; or they may excite a disease of long continued or even permanent nature.

The action of heat and cold are peculiar; they are by no means simple of explanation. A chicken, for example, is by nature immune to anthrax; but it will contract this disease when exposed to cold. A frog on the other hand will lose its immunity to anthrax when it is heated. The reason for these things is that when the chicken is exposed to a degree of cold which is abnormal for its constitution, or when the frog is exposed to heat abnormal for its way of living, a whole chain of modifications is in each case provoked. Nutrition is disturbed, the life of the cells (and consequently their behavior) is altered, the nervous system, the heart, the blood corpuscles—all the tissues are affected. It is by a similar mechanism that cold or heat occasions in man the development of diseases, especially those of an infectious nature. Cold will produce an aversion in any given

organ, thus diminishing its resisting power. For example, peripheral cold will produce pulmonary anemia, the blood being driven into the abdominal vessels and organs. Pneumonia will be the result, for it is now established that active congestions hinder infections, whilst anemias diminish the means of protection.

Vitality as Related to Prognosis and Treatment.—The *Therapeutic Gazette* observes how oftentimes persons of seemingly little vitality have withstood the onset of grave infections or serious injury with comparative impunity, while others seemingly most robust and healthy have died with dreadful suddenness. Undoubtedly our conceptions of vitality are in some respects distinctly erroneous; and our knowledge concerning the tenacity of life is oftentimes distinctly and woefully limited. We oftentimes see chronic invalids survive an attack of influenza or typhoid fever, when the heartiest member of the family succumbs; and seemingly puny children withstand illness after illness while others more robust succumb in a few hours. And we are not infrequently perplexed by the survival of those who have manifestly been in desperate illness; while others who present no alarming symptoms at the moment suddenly pass away without warning. The longer, indeed, the physician is engaged in practice the more timid he becomes in prognosing a recovery; experience makes him particularly wary as to statements concerning the possible duration of life in the presence of a manifestly fatal malady. All such factors as these are to a large extent an unknown quantity, but they also govern to a very considerable degree the results obtained by treatment (by means either of drugs or any other procedure). And undoubtedly in many instances we credit a drug with the patient's survival in one case, and blame it for the death of another—when in reality the essential factor is not the drug but some variation in the patient's vitality. We should employ drugs with our utmost skill and with a clear conception of their value; it also behooves us, in the humility which is nearly always characteristic of the scientist, not to be too boastful of our successes, and not to be too cast down by instances in which our efforts have failed. The *Gazette* reproduces the observation of the Paris correspondent of the *Boston Medical and Surgical Journal*, Feb. 6, 1908, that it has never ceased to be a marvel to witness the diverse manner in which different human beings behave as regards their resistance to dissolution; that some people appear to succumb so easily in the face of disease that their dissolution seems to be about as slight a thing as the blowing out of a candle; whereas others, aged and weak, with apparently no power of resistance whatever, put up such a fight against illness that it would seem nothing can kill them. Among instances illustrating these two sides of the question of vital resistance to disease is that of a youth of seventeen whose left hand had been caught by a transmission belt in such a way that instantly his entire arm and scapula were ripped from the thorax, only the clavicle remaining in place. A surgeon who saw him shortly afterward found no immediate hemorrhage and no especial traumatic shock; but he tied the subclavian, trimmed the edges of the wound, and

brought together the edges of the skin. The patient recovered entirely in a fortnight. In another case a man of twenty-five, while cleaning a drum over which passed a wire rope, suffered from exactly the same injury. Pressing his left hand to the torn surface, which was bleeding profusely, he went down several flights of stairs until he found a fellow workman, who bound his thorax tightly with a long white flannel belt and took him to the hospital. By that time the hemorrhage had ceased. The wound was trimmed, the skin sutured, and the man recovered in two weeks, notwithstanding the severity of the wound and its infection by his filthy left hand. Opposed to such cases as these are such in which death has unaccountably followed upon a very slight injury or malady.

A Malaria Theory of History.—A new theory as to the cause of the decay of ancient Rome and Greece was recently advanced by W. H. S. Jones, of Cambridge. Practically the first occurrence of the Greek word for malaria is in "The Wasps" of Aristophanes, in 422 B. C. Three years before that date the Athenians had been engaged in military operations on the island of Sphacteria, now one of the most malarial spots in the Mediterranean. The Peloponnesian war soon afterward led to great tracts of lands going out of cultivation, which would give the malaria bearing mosquito ample breeding grounds. When the word for malaria became common the word for melancholia (black bile) began to appear. The melancholia of the ancient Greek writers resembles the mental effects of malarial fever; Hippocrates found it to occur especially in autumn (the malarial season), and Galen considered that it caused enlarged spleens (a feature of malaria). Malaria seems thus to have become prevalent in Greece in the fourth century B. C.; and the change which gradually came over the Greek character from 400 B. C. onward was one which would certainly have been aided, and was in all probability at least partially caused by the same disease. The Greeks commenced then to lose much of their intellectual vigor and manly strength. Home life took precedence of city life. Patriotism decayed and lofty aspirations almost ceased to stir the hearts of men. Dissatisfaction and querulousness are marked characteristics of that age.

Anterior Poliomyelitis in the Acute Stage.—L. C. Agar (*Long Id. Med. Jour.*, Dec., 1907). The earliest symptoms point to the gastro-intestinal tract. There is fever, constipation, convulsions during the first day or two, pain and tenderness on pressure and movement. There may have been in mild cases a history of disturbances of the digestive tract a fortnight before the appearance of paralysis. We have here not to deal with a true neuritis, for the soreness is in the muscles, not in the nerve trunks. There is no disease in which the individuals suffer more widely than in anterior poliomyelitis. A mild type (that in which some unusual group of muscles of the back are the only seat of the paralysis) might easily be overlooked. Another type, which is difficult or impossible of early differentiation, is when the infection is so high in the cord that one thinks of meningitis with opisthotonos, convulsions, irregular and sluggish pupils, severe headache with rolling of the eyes, head and the occasional sharp cry;

such a case may recover with a limited area of permanent paralysis. On the other hand grave symptoms may occur when the early stage has been mild.

Chilliness as a Cause of Illness.—W. Siegel (*Deut. Med. Wochenschr.*, March 12, 1908), shows by experiments on animals that the presence of bacteria plus the action of cold is not always followed by illness. The action of cold, however, without the co-operation of bacteria, may under certain conditions induce an acute parenchymatous nephritis. Chilling of the feet reflexly causes active constriction of the renal vessels; and the resulting anemia may persist indefinitely, entailing disturbances in the circulation and in the nutrition of the cells, and degeneration of the functional elements, with inflammation as the outcome of the whole process. The decaying cells or the abnormal metabolic products produced by degenerating cells may likewise induce an inflammatory process. The dogs experimented upon invariably developed bilateral parenchymatous nephritis, even when only one foot had been chilled in ice water (the hind legs up to the knee were immersed in water at 39 degrees F.). There was also mild nephritis in twelve dogs who had only been about on ground covered with melting snow. It would thus seem that a nephritis may be developed through cold without the presence of bacteria.

Acute Invasion of the Kidneys by the Bacillus Coli.—The commonest cause of the acute infection of the kidneys with the bacillus coli is typhoid fever, states W. H. Thompson (*Med. Rec.*, March 21, 1908). This inspection begins with rigors or delirium and general unfavorable symptoms; it may also occur as a complication of chronic interstitial nephritis with gastritis, fever, coma and oliguria. Chronic ulcerative colitis is another cause. The condition is serious, but can be promptly relieved by an initial dose of calomel and forty grains of compound jalap powder. If the patient be comatose ten grains of urotropin (which is a poison to the bacillus) with ten grains of sodium benzoate may be given every two to three hours in four ounces of water by rectum.

Transplantation of the Thyroid in Myxedema.—Moscykowitz, of Vienna, presented the case of a child of six, suffering from myxedema due to an aplasia of the thyroid gland, in which marked improvement was obtained by implanting into the tibia a piece of thyroid tissue obtained during a goitre operation. A cutaneous periosteal flap was dissected from the tibia, and the medullary cavity was then curetted out, especially at the condyles. A piece of thyroid gland just removed from a thyroidectomized patient was then divided into small slices and placed into the medullary cavity, after which the periosteal flap was replaced and sutured. The piece of transplanted goitre appeared normal both microscopically and under the microscope. Very little time elapsed between the thyroidectomy, which was undertaken for parenchymatous goitre, and the implantation. The child has made some progress; this is recognized as slow, states the *International Journal of Surgery*, April, 1908. To determine the ultimate success of the operation, however, and whether the implanted gland has become united, observation must extend over a much longer period than the ninety days from the operation to the time of the report. Von Eisel-

bery observes that he had himself performed transplantation of the thyroid gland in a number of cases, but had selected instead the abdominal wall between the fascia and peritoneum, since experiments on animals had shown that healing takes place readily at such places. He could see no advantage in transplantation of the gland into the medullary cavity. Payr had transplanted into the spleen of a myxedematous child a piece of thyroid gland taken from the mother, with marked improvement in the child's growth.

The Ether Habit is said to be dreadfully prevalent in France, states the *London Globe*. Attempts have from time to time been made by the authorities to proscribe opium, morphia, hashish, absinthe and other poisons; but none of these is at present causing so much anxiety as ether. The passion is so great that the number of "etheromanes" is almost incredible; and new recruits are added daily to the ranks of those who have been enslaved by the insidious fluid. Opium and hashish has appealed only to certain classes; but ether finds its victims among all. As a means of intoxication it is within reach of all purses; "and although its effects are less deadly than those of some other drugs, its consequences cannot be regarded with a complacent eye." At Rochefort-sur-Mer, for example, there is a maritime hospital frequented by students who later will qualify for naval surgeons or colonial doctors; and among these young men, when the "grind" becomes too irksome or the discipline too severe, ether has become a frequent remedy. Its ravages among them have consequently been considerable; and last year several suicides were traced to this ghastly form of overindulgence. These facts have gradually become known despite the attempts of the authorities to suppress them. It is not in the provinces alone, however, that the ether habit has manifested itself. "Etheromanes" are frequent in Paris; and when remonstrated with they defend their weakness by exaggerated descriptions of the delightful intoxication they experience in absorbing the fluid. The ether is sometimes taken in the form of a syrup, much as any other alcohol; others let a few drops of volatile ether fall on a bandage which is held before the mouth and violently inhaled; one of the most "refined" methods of enjoying ether is to mix it with mild strawberries, when "it makes a dish fit for the gods," so its devotees declare. "But the ether fiend is not a good sight next day. He has had a bad night, his will and his strength are gone and his face is drawn and haggard, while his eyes are dilated beyond measure." Montmartre is the portion of Paris most addicted to this habit, and the majority of the unfortunate victims are women.

The American Delegation to the sixteenth international Medical Congress, to be held in Budapest next year, will be composed of forty-five men from all parts of the country, and representing nearly all branches of the profession. Dr. Joseph D. Bryant, of New York, and Dr. Herbert L. Burrell, of Boston, head the list, which contains also the names of three representatives of the Federal government—Surgeon-Gen. Robert M. O'Reilly of the army, Surgeon-Gen. P. M. Rixey of the navy and Surgeon-Gen. Walter Wyman of the Public Health and Marine Hospital Service.

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THE NECESSITY OF SCEPTICISM IN MEDICATION.

WE have, in a prior editorial, spoken very optimistically of drug therapeutics, not only for the present but for the future. It is well to counteract the impression that might possibly have been conveyed, of a credulity which is not justified by actual facts.

In the first place, it is possible on a priori grounds, to supply to the body an ingredient whose nature is definitely known and which can be quantitated, or, on the other hand, in some instances, to oppose an excessive formation. For example, if we know the amount of HCl in the stomach contents, we can calculate pretty accurately the amount necessary to make good a deficiency or we can give magnesium oxid or hydroxid or even lime water to reduce it, if in excess. But, in early childhood, and in old age, and in acute inflammatory processes involving the stomach, it is decidedly unwise to attempt to secure the physiologic standard of healthy adults. Again, it is better, if possible, to secure a normal secretion than to correct by artificial means, an abnormal one.

In the case of hypothyroidism, we have a quite reliable, satisfactory but artificial and somewhat tedious means of supplying the lacking secretion. On the other hand, in hyperthyroidism, we have no such ready means of counteracting the excess as in the case of hyperchlorhydria. Several somewhat different lines of research offer considerable hope that the necessary correction may ultimately be made, though probably the restoration of any glandular function to the normal will depend on the relatively slight involvement which has caused the initial excess or deficiency. In all such cases, attention to the organic lesion, which has now been pretty well demonstrated even in cases formerly considered to be purely func-

tional, is important and, it must be confessed, we do not know exactly how to secure the desired process of restoration.

Theoretically, the digestive ferments are ideal drugs. In the first place, they are not strictly drugs at all but normal ingredients of secretions. Excepting for some recondite points of no great practical importance, we know just what these ferments accomplish and, in the stomach contents, at least, we can quite readily test the performance of their function. Practically, however, we know that these ferments are almost never lacking and that when the digestive function is imperfectly performed, it is on account of various complicating details so that, even if we demonstrate the theoretic need of these ferments, their administration is not likely to prove successful, although they are of some value in isolated instances. The pancreatic ferments, moreover, are destroyed or decidedly weakened by their passage through a stomach in which peptic digestion is performed with any degree of completeness.

In a much more general sense, the lack of a bodily ingredient is by no means an assurance that it can be successfully supplied nor, conversely, can an excess always or even usually be successfully treated by withholding the corresponding substance. The application of this principle brings us into the realm of dietetics. Every clinician knows the difficulty of controlling the amount of fat by diet and in diabetes, in which the system needs and wantonly wastes sugar, it is only exceptionally and in limited degree that we can make good the deficit by administration. It has been definitely proved by the most convincing experiments that the body can assimilate iron in various forms, certainly in the simple, old-fashioned inorganic forms so that, instead of its being irrational or rational only in an indirect way to fix sulphurous gases in the bowel, by the administration of inorganic iron salts, the doubt of availability is thrown on the newer, fancier imitations of haemoglobin. Unfortunately, in nine cases of anaemia out of ten, we do not have to deal with a case of iron deprivation, any more than the average lean individual is thus built because he does not eat enough. Occasionally, we encounter a simple, easy case of iron starvation, readily counteracted by administering almost any iron tonic. More often, there is some recondite fault of digestion—most of the iron being absorbed from the upper part of the small intestine—or, still more probably of assimilation, or on the other hand, there is a true failure of blood cell dormation or an excessive destruction.

It is a paradox but a reasonably correct one that the simpler and more brilliant the effect of a drug, the less liable is it to be efficacious in the ultimate

sense. Barring certain grave conditions, we can move off the bowels in any case of constipation by any one of a large number of drugs, but no case of chronic constipation can be cured or even relieved, except by exceedingly mild measures.

So, too, the alkaloids and glucosides and the substances commonly known as "active principles" are, as a rule, of very transient benefit and, indeed, they often merely relieve symptoms and do so at the cost of the strength and recuperative power of the patient. With regard to morphine, it is a good rule to use it only in conditions of brief duration and not liable to recur soon, or, on the other hand, in hopeless disease. If apparently indicated in a non-fatal and potentially curable disease of considerable duration or in a disease of paroxysmal nature with frequent recurrences, it not only militates against ultimate relief but even tends to lose its temporary efficiency and to cause the patient more misery than it relieves, even without reference to the establishment of the habit. One astute clinician compared morphine therapy to the little boy's expedient of warming his legs on a cold day with the contents of his bladder.

Another paradox in therapy is that a substance that produces marked physiologic symptoms, as curare and the opium alkaloids aside from morphine and codeine, may be of very little applicability as a drug. Dr. H. C. Wood, Sr., after a lecture on calabar bean, stated that it was surprising how seldom one found just the case to which its alkaloids, with their well marked physiologic action, were applicable.

We have previously alluded to the question of treating the disease or the patient. On the one hand, there is no definite treatment of a disease name, such as quinsy, pneumonia, etc. On the other hand, the patient can scarcely need treatment beyond food, in the broad sense, including water, salines, iron, etc., good nursing and mental influence. It is, therefore, legitimate to say that there is a general indication to treat the disease, in the sense of doing something to relieve, as directly as possible, the lesions and perversions of function produced by it. Of course, as in any other art or trade, it may be impossible to fulfill the theoretic indication and, if so, there is little sense in blinding ourselves by ignorance and administering drugs simply for the sake of doing something. As in all questions of fact, widely different opinions exist as to whether a given therapeutic measure is or is not of value.

Dr. William C. Gorgas was elected president of the American Medical Association. Col. Gorgas is a member of the Panama Canal Commission and has done most noble and brilliant work as chief sanitary officer of the Canal Zone. The next session of the convention will be held in 1909 at Atlantic City.

THE VALUE OF ATHLETICS AND SOCIAL LIFE IN ACADEMIES AND COLLEGE.

THE recent legacy to a university of three million dollars, conditional on the abolition of college athletics, has raised in the most practical way, the question of the value of sports and, indirectly of other phases of modern college life, not directly connected with education.

The relatively enormous sums of money expended in one way and another upon athletics, and the amount of time and interest devoted to them, as well as various other good and harmful results, have already raised this question, not only with college faculties but, probably even more with the alumni, mainly engaged in professional and quiet business life, and whose personal college experience was a blank so far as this item was concerned.

The traumatic results of athletics—especially conspicuous in football—have universally been condemned except by those immediately under the influence of the college spirit. It must be admitted, however, that deaths and serious injuries from athletics are by no means so common as some have supposed and that the reasonable regulation of football games has already had a wholesome influence without, apparently detracting from the interest of the game. Indeed, entirely aside from any ethical considerations, many persons object to the present game of football as consisting in an attempt to prevent individual skill in the way of spectacular plays. In this respect it is almost the opposite of baseball, in which, with due regard to a fair degree of difficulty of making effective strikes, any interference with the actual individual player is forbidden and every rule favors co-operative plays.

From the standpoint of hygiene, it must be granted that athletics bear about the same relation to exercise that theology does to religion. Proper exercise has in mind the ability and welfare of the individual. In athletics, the aim is to excel a personal opponent or a record; and in carrying out this policy, the limitation of the individual's strength cannot be considered. There is abundant scientific basis for the belief that mere muscular strength or agility does not bear much relation to visceral health and that the person who establishes a muscular, circulatory and respiratory standard beyond the natural requirements and possibilities of his routine life, must eventually suffer from the effects of atrophy or of unbalanced physiologic processes. This is entirely beside the possibilities—by no means imaginary—of extrinsic traumatism or intrinsic overstrain.

It is, perhaps, illogical but quite natural that members of any body should feel pride in the achievement of individuals or groups of their own number, in mat-

ters not directly connected with their avowed purpose of association. As physicians, we are proud of Oliver Wendell Holmes' poetry, of the novels of S. Weir Mitchell, of Hemmester's musical talent, of the executive ability of General Wood. Obviously, the student body is pleased and proud to have its own members shine in athletics of any kind. Indeed, we all rather take for granted the things that immediately concern us and emphasize the outside issues.

College athletics have necessarily gone beyond the conception of the more or less accidental possession of skill and strength by those who are primarily students. Any enterprise undertaken systematically on a large scale, demands specialization. Thus, inevitably, instead of developing or merely discovering the athletic skill of students, colleges have made students of athletes. In the past, it has been justly asserted that improper tactics have been followed to entice athletes to this or that college and to allow their pursuit of college studies to be purely nominal. This abuse has, we believe, been corrected as thoroughly as possible. There are even numerous instances in which scholarship and physical prowess have been united. In general, however, it stands to reason, that, beyond a certain degree, very few individuals can excel in more than one particular. Thus, the oarsman, ball player, track runner, tennis player, etc., in spite of attendance at college will remain such and will not become a linguist or mathematician, physician or lawyer, of transcendent ability. The converse also holds.

In some instances colleges—and we mean the executive powers behind the colleges—have sought to exploit education by the most specious advertising schemes and have followed commercial rather than professional and scholastic ideals. Hence, the responsibility for evil and the praise for good results from athletics, belong to the administration rather than to the student body.

In presenting the unfavorable phases of college athletics, we have by no means intended an unqualified condemnation. The general verdict of college faculties and boards of control, at first lukewarm or opposed to athletics, has with few exceptions, veered to the opinion that athletics have come to stay, that, with due control, the physical, economic and intellectual evils can be nullified, and that with such control not only the ones directly interested but the general student body and the college as an institution, are benefited by the concentration of enthusiasm, at proper times, in manly sport. So firm is this conviction that the legacy mentioned has been refused. The very concrete dictum that athletics are worth more to one fair-sized college than three million dollars, must be taken as an authoritative verdict of their value.

PRACTICAL FEATURES OF LEGISLATION REGULATING VIVISECTION.

IN preceding editorials, we have admitted that abuses do exist in the practice of vivisection and have pointed out certain general principles which may be available as guides in framing laws. We are perfectly willing to be derided as a zoophilist or sentimentalist, in advocating legislation to prevent cruelty to the lower animals. Indeed, it is too late in the day to consider whether such legislation ought to exist. It does already exist and, probably, in a form to allow its execution, at least after minor amendment, so as to reach professional vivisectioners, however prominent and however strengthened by institutional influence, if their work is needlessly cruel. Not to prevent proper experimental use of animals in scientific research but to facilitate it, it seems to us that the whole subject should be rationally and deliberately studied by a commission and that the medical profession is best adapted to take the initiative and should do so for its own scientific interests.

Vivisection should be limited to the holders of medical degrees or licenses and to scientific students of biologic branches, devoted to research and teaching. Just how this limitation should be expressed requires careful consideration. We are convinced that vivisection should not be used in the instruction of immature boys and girls, certainly not below the high school and perhaps not below the college. On the other hand, we are equally firmly convinced that no obstacles should be laid in the way of independent investigators, simply because they are not connected with institutions. Whether a preliminary license should be required or not, is a matter for careful debate. If required, it should be easily obtainable and should require no "influence." It also seems plain that the prevention, on the one hand, of a sort of scientific graft and, on the other hand, the fulfillment of the fundamental purpose of such legislation, should determine that a license, if required at all, should be issued to an individual and not to an institution or building.

No further obstacles should be placed in the way of vivisections under full anaesthesia and terminated by the death of the animal before anaesthesia has ceased. Nor should obstacles be placed on the practice of ordinary injections and inoculations, experiments as to the action of drugs, etc., provided that these involve merely slight momentary pain, comparable to that of a hypodermic needle or mere discomfort.

The use of stray dogs and cats in cities and of stock animals condemned on account of disease, for scientific purposes, should be incorporated in the law. It should not be forgotten that a large part of the cruelty involved in ordinary didactic vivisections, is

not the suffering of the dogs and cats themselves but of the children or even adults deprived of valued and often valuable pets. Nor should we overlook the fact that the present method of securing animals for laboratories and colleges breeds avarice, cruelty and dishonesty among small boys.

It should not be forgotten that the term vivisection, in the broad sense, covers a multitude of experiments not involving cutting, and that the latter are, on the whole, more apt to cause pain, than literal vivisections. Efficient legislation requires, therefore, a very careful listing of experiments hitherto practiced and likely to be practiced, an expert consideration of their nature, and an accurately worded definition of allowable and forbidden methods, to assist in the execution of the law, with due precaution for a presentation of general principles to prevent cruelty, and for an avoidance of a conflict between general and specific requirements.

Whether or not a report of experiments should be made to an official board, whether the report should be detailed or general, and the time at which it should be made, are questions that have been raised but which we do not pretend to be able to settle off-hand. But, it is a safe rule to avoid red tape so far as possible and also to shut the barn door before the horse escapes. Hence we are inclined to believe that experiments under full anaesthesia and those involving momentary slight discomfort should be free from this requirement. On the other hand, experiments requiring the survival of an animal after an experimental operation, or those involving painful procedures without anaesthesia, whether literally vivisections or not, should be reported in advance and that they should be permitted only after a careful, impartial, expert consideration of the degree of pain involved and of the probable scientific and humanitarian value. For example, an experimental operation, performed under full anaesthesia and involving no more subsequent discomfort than is ordinarily suffered by human beings after a coeliotomy or the inoculation of a disease which is frequent by accidental infection should be readily permitted, with due regard to practical results and avoidance of unnecessary duplication of experiment. On the other hand, the series of experiments undertaken some years ago by a celebrated "scientist" to determine the temperatures and periods required to roast animals alive are absolutely worthless from any practical or genuinely scientific standpoint and should never have been allowed. So, too, the maintenance of a living, suffering animal as part of an apparatus to demonstrate some well known principle of physics or electricity or to establish some recondite and non-practical fact in nervous physiology, should either

not be permitted at all or should be allowed only under special authority for a definite purpose.

It will be seen that we are not advocating the passage of a bill to fool humane persons or to allow experimenters to violate the spirit of the law. What is wanted is a law, framed carefully and in good faith. The physician should not forget that he is primarily a preventer of suffering, not a scientist and that, beyond everything else, he is a citizen.

We do not agree with those who fear the influence of unreasonable anti-vivisectionists. On the contrary, we believe that the average layman rates the practical value of vivisection higher than the average practitioner of medicine does. So far as physiology and toxicology and ordinary problems of bacteriology are concerned, it does not seem probable that much further advance will be made by vivisection. Careful clinical and post-mortem examinations of the human subject and of its secretions, chemic experiments and the like, seem to offer more valuable promises of further enlightenment, excepting, of course, for new pharmacologic substances, newly discovered germs, etc. Unquestionably, the use of animals to provide sera and analogous products, is destined to increase enormously, even to take rank among the great animal industries, but such use need involve no more cruelty than the keeping of animals as a supply of milk or of wool.

We do not deny that a professional vivisectionist cannot think of all sorts of experiments, more or less elaborate and more or less painful, intended to demonstrate new facts or to furnish more technical evidence with regard to accepted facts as other than useful. But, quite impartially, we believe that comparatively little further advance will be made along such lines from the standpoint of one who is both scientific and practical. This opinion is not shared by the laity who fail to realize that in natural science as in geography, a point is reached at which further tremendous strides in discovery are impossible.

THE LADY OF THE LAMP.

A DISTINGUISHED honor, of which a woman has only once before been the recipient, was recently given Florence Nightingale. The corporation of the city of London voted to bestow upon her the freedom of the city. Shortly before had King Edward conferred upon this great lady the Order of Merit. To Americans unfamiliar with such honors, they seem sadly incommensurate with the achievements of those who receive them; nevertheless in England they are held of great and no doubt real importance.

The Lancet has well taken the opportunity to pay

a just and very impressive tribute to the humane achievements of the "Lady of the Lamp," as Miss Nightingale is affectionately known wherever the English tongue is spoken. We are reminded of the frightful state of things which prevailed in the British camp before Sebastapol during the first stage of the Crimean war. The so-called hospitals then provided for the sick and wounded British soldiers were literally channel houses. Three thousand sufferers were huddled in a single one of them. Order, cleanliness, intelligent management were unknown. Filth was everywhere; infection was uncombated. One-half of those in hospital died; gangrene resulted in eighty per cent. of the amputation cases. At first surgeons were much too few; when an adequate number were at last sent out they were greatly hampered by ignorant and boorish officialdom and by the impossibility of securing fit attendance for the sick and the wounded.

Upon such a situation as this did Florence Nightingale and the band of devoted nurses whom she had selected and trained appear; their task was indeed like the cleaning of the Angean stables. They made filthy places clean; they substituted order for confusion. They brushed aside official routine, wherever it sought to hamper them. Medical stores were locked up in obedience to an order that they must be inspected before distribution; Miss Nightingale had the doors of the storehouse broken down, and then she took what was needed for the sufferers in the hospitals. "Of her kindness, her gentleness, her marvelous influence over her patients, of her firmness, her energy, her untiring devotion we need not speak. Are they not written in the book of the chronicles of the British nation?" No Englishman has forgotten the modesty which she exhibited on her return after the completion of her tremendous task; or the unselfishness which prompted her to refuse for herself all rewards. It was characteristic of this now very venerable lady that when the freedom of the city of London was tendered her she declined the offer of a golden casket to enclose the address presented to her and asked that the money thus saved might be spent in charity.

The money that was subscribed for her on her return to the Crimea was used not for herself; but to lay the foundation of training schools for nurses at the principal London hospitals. Theretofore Daisey Gamp reigned supreme; even the rich had then to be nursed by servants ignorant of the simplest laws of sanitation and utterly incompetent for the duties of a nurse. To-day the trained nurse, the physician and the patient most of all must be grateful to Florence Nightingale for having established nursing as an honorable, merciful, noble and most beneficent calling.

INDEPENDENCE DAY TETANUS.

THIS holiday has rather hysterically been termed the "bloody fourth," with its "annual holocaust of carnage," etc.; and efforts are making toward less exuberant celebrations. It is represented that in many other countries—France, Germany and the like—such occasions are more fittingly and effectively observed by means of fetes and other "rational ceremonies." For adult patriotism oratorical explosions are adequate; but these are, for some reason which had best not be assiduously sought, not sufficiently satisfying to the youth. In the legitimate interests of the latter some reconciliation of patriotism and prophylaxis is essential. Indeed the casualties in maiming, blinding and lockjaw originating in this holiday have of recent years been steadily diminishing; and surely they could, with forethought and some little knowledge of the character of explosives, be made almost nil.

Particularly should fatalities due to the tetanus bacillus be prevented; and they can be. This germ is essentially anaerobic, to which property is certainly due the comparative rarity of this dreadful disease; it thrives in closed wounds, which are devoid of oxygen. It does not itself traverse beyond the site of an injury, nor does it enter the lymph and blood channels; the toxins which it generates are the virulent factor. It has its habitat mostly in earth and sometimes in putrefying fluids or manure. In many localities it is exceedingly prevalent. Generally the infection occurs through the introduction of impregnated dirt into wounds—sometimes very slight, especially of the hands and feet. The majority of cases of tetanus which begin their incubation on Independence Day come about through the discharge of powder, especially from blank cartridges; half of the remainder are due to giant firecrackers. The Journal of the American Medical Association has collected statistics on this subject. After, and evidently in consequence of wounds received on July 4th, 1906, there developed 89 cases of tetanus, of which 54 were caused by blank cartridges, 17 by giant firecrackers, 1 by a small cannon, 7 by firearms, and 10 by powder in other ways.

The traumatism serves to introduce germs accidentally present on the skin; as may be readily understood when we consider the normal condition of the average small boy's hands. The wound may seem but a mere burn; it may appear quite superficial, yet some part of it may at once become impermeably sealed. The bacilli may become implanted in invisible or microscopic pockets or fissures. In puncture tetanus the germ may be introduced upon the instrument itself, as a dirty nail or the tine of a fork. Car-

tridges may also be made of germ-harboring material. Punctured, contused or lacerated wounds are much more dangerous than such as are clean cut. Crushing injuries, deep lacerations, gunshot wounds, wounds beneath fascia, and especially where dirty clothing has been introduced into torn flesh, are most to be feared.

Obviously, then, such forms of fireworks as the toy pistol and giant firecrackers should be absolutely forbidden to children. It would seem that practically no cases of tetanus have developed from roman candles, torpedoes, paper caps, small firecrackers or display pieces. In order that no undue dread may be aroused it should be observed that for the 89 cases above stated there were 797 blank cartridge wounds.

In the event of traumatism from fireworks local treatment should at once be instituted on the open wound plan. Deep wounds, as where the paper wad of a blank cartridge has become imbedded in circumscribed tissues, must be cleaned most thoroughly, enlarged, if necessary, under cocaine or general anesthesia, irrigated by some such antiseptic as strong peroxide of hydrogen, disinfected from the bottom, well drained and packed with gauze, which must be renewed more frequently than in ordinary cases. All necrotic tissue must be heroically cut away; it is both apt to close up parts of the wound, and to prevent phagocytosis of the bacilli. Gelatin used as a styptic is said to have induced tetanus.

Tetanus antitoxin is an efficacious prophylactic; it were certainly malpractice to withhold its use whenever the disease is feared. Most health departments hold this serum in readiness. Ten c.c. should be injected at once; a dose which would serve in the morning may be without effect in the evening. Five days afterward another 10 c.c. should be injected. The powdered antitoxin may be rubbed into the wound.

The symptoms may not become manifest until a fortnight after the injury. The mortality after the disease has thus developed, averages at least 80 per cent. The onset is usually shown by rigidity of the neck and of the jaws; difficulty in mastication and swallowing, chills, rigors, asphyxia and spasms of various muscles follow; there may be the *nisus sardonius* and *opisthotonos*. The respirations will be rapid, with profuse sweating; the temperature may exceed the thermometer's scale. Recovery may be hoped for if the spasms are limited to the cervical and maxillary muscles; and if the fever is not high.

Dr. Thomas Lambert Hinton recently celebrated his hundredth birthday at St. Leonards, England. With the exception of Sir Henry Pitman, Dr. Hinton is the oldest member of the Royal College of Surgeons. He served in India from 1829 to 1846.

EARSTRAIN VERSUS EYESTRAIN.

OUR ever enthusiastic colleague on the subject of eyestrain, Dr. Gould, of Philadelphia, has produced another biography in evidence of his theory. Lafcadio Hearn is this time the horrible example; eyestrain did for his moral makeup. This author, though a genius in literature, seems to have been in a bad way in other respects. He was decidedly unmoral (not immoral, if you please); dishonest; unfaithful to his friends. We protest, by the way, against the revelation of the personal imperfections of men whose works have given pleasure and satisfaction to the world. These works we should accept with gratitude; the lapses of their authors from morality are no business of the world's. However, Dr. Gould fears there may be too many Hearn's in the world for want of spectacles (of what great man has he not said this); and he would have us look to the eyes of the rising generation, that "by early correction of visual defects we may convert the growing child into the straight path that leads to moral worth and soundness of intellect."

It seems that Dr. Gould now has a rival in extremism—Dr. Waetzold. The oculist-biographer attributes most cases of hysteria, neurasthenia and many nervous ailments to eyestrain. Waetzold, on the other hand, believes that most such affections are due to earstrain; and he holds that the prime basis for these aberrations lies in the outrageous and scandalous abuse of the piano. He has well fortified himself (in the usual way) by the collecting of a large number of cases. "Out of 1,000 young girls studying the piano before the age of 12 years, 600 were afflicted with nervous troubles later on, while the number having affections of this kind was only 200 for those who commenced the study of the piano at a later age, and only 100 were affected among those who had never touched this instrument." We ought therefore no longer compel young girls to indulge in musical exercises. The study of the violin is even more detrimental than that of the piano; for Waetzold's statistics show the violin to be a worse nerve-wrecker than the piano itself.

We are with Waetzold in this controversy; we believe with him that "earstrain" is a more dreadful peril than eyestrain. The latter affects only the individual; whilst the former induces all forms of nervous affections—even homicidal mania—in pretty much everybody who has to listen. Gould, however, is an experienced and canny controversialist; Waetzold, we fear, will be no match for him. We can easily foretell Gould's next move; he will, of course, declare that all the nervous diseases mentioned by Waetzold are due not to the noise of the piano but to the notes which the unrefracted girls have to read.

EXPECTANT ATTENTION.

MR. B. PILLSBURY has prescribed a clear, conservative and comprehensive presentation of the psychology of attention... He considers the chief business of this science to be the analysis of mind into sensations as its structural elements, and the determination of the ways in which these elementary states combine in their functions in higher mental processes. Attention is an increased clearness and prominence of some one idea, sensation or object, whether remembered or directly given from the external world, so that for the time it is made to constitute the most important feature of consciousness; "it depends not upon some original conative effort, but upon true general factors—the present environment on the one side, and the entire past history of the individual on the other. To these two factors, states Pillsbury, is due whatever prominence any fact in consciousness may possess. We find here a very clear presentation of the important subject of attention, but would, however, point out that the matter was exceedingly well grasped, a good century before the present science of psychology was ever thought of. John Hunter, for example, in 1786 discoursed in the "animal magnetism" of Mesmer: "I was asked to go to be magnetized, but first refused, because the spasm on my vital parts was very likely to be brought on by a state of mind anxious about any event; and I feared it should be imputed to animal magnetism. But considering that, if any person was affected by it, it must be by the imagination being worked up by the attention to the part expected to be affected, and thinking I could counteract this, I went; and accordingly when I went I was convinced by the apparatus that everything was calculated to affect the imagination. When the magnetizer began his operations, and informed me that I should feel it first at the roots of my nails of that hand nearest the apparatus, I fixed my attention on my great toe, where I was wishing to have a fit of the gout; and I am confident that I can fix my attention to any part till I have a sensation in that part. Whenever I found myself attending to his tricks, I feel to work with my great toe, working it about, etc., by which means I prevented it having any effect upon me." We here find the basis of the whole subject of purposive psychic influence over diseased conditions.

In 1838 Johannes Muller observed: "It may be stated as a general fact, that any state of the body, which is conceived to be approaching, and which is expected with certain confidence and certainty of its occurrence, will be very prone to ensue, as the mere

result of that idea—if it does not lie beyond the bounds of possibility."

Our colleague who comprehends the principle of expectant attention and the power of an idea (either for good or for evil) will be considerably well advanced in the subject of psychotherapy. If he succeeds in eliminating from the minds of morbid patients such obsessions and fixed ideas as are at the bottom of their sufferings, and can in place of these, by wise suggestions, bring the patient's attention to bear upon healthful ideas, he will have accomplished as much as any "mental healer" can do; and will, because of his ability to eliminate all structural factors, not make the foolhardy and unfortunate mistakes of which the latter are so often guilty.

BETWEEN THE DEVIL AND THE DEEP SEA.

DR. L. D. MASON, of Brooklyn, vice-president of the American Society for the study of inebriety, alcohol and drug neurosis, declared in a recent address to the inmates of the Washington Home in Chicago, during the meeting of the American Medical Association, that the too copious use of water is as dangerous as over-indulgence in alcohol. He cited the case of a sufferer from "aquamania," who "spends hours in a bathtub and drinks so much water that he has reduced the solids of his body and worked serious injury to himself."

One of Dr. Mason's colleagues at this Chicago meeting was equally severe in his condemnation of alcohol; he particularly reprehended the moderate drinker, who is never visibly drunk, but succeeds so well in his effort not to be sober; such a man "is worse than the occasional drunkard." It was hopefully declared that "the day is not far away when all the distilleries of the country will be needed to manufacture it (alcohol) for purpose of light, heating and power. To-day we are drinking it and killing ourselves. It will not be long before mankind has converted it to its true use." This is all very good; but between this position and that of Dr. Mason mankind will, we fear, find some little difficulty in establishing for itself a just proportion. Widal, of Paris, maintains also that the average man drinks far too much. He who would remain free from organic disease should drink as little as possible; he should indeed never take any liquid except just sufficient to slack his thirst. Particularly, he declares, is drink most harmful for the sick; "it is almost fatal to give too much of any kind of liquid to a patient afflicted with Bright's disease." Here is another extremist; and extremism is always a mistake. We believe, however, that in infectious fevers water is often urged upon the patient in excessive amounts

*Attention Publ., The Macmillans.

The labor which both the kidney and the heart have to do is thus often greatly increased; and there have no doubt been fatal results of such excessive imbibition of water by the sick.

Confessio Medici.—We beg to register a feeling of resentment against the author of the work entitled as above. What would become of the reviewer, we should like to know, if all books submitted to him were written in this way; where would he ever find time to eat, to sleep or to hear the latest colorature opera singer. The thing is outrageous; when has a reviewer been so imposed upon? This work has held us fast from beginning to end; until we have finished it we have been able to do nothing else. In sober truth the book is fascinating and most charmingly written. We have mark a number of passages for re-reading. Every page is kaleidoscopic with scintillant expressions, pregnant observations, evidences of physicianly experience and of profound philosophic reading. And throughout all there is an ingratiating spirit of bonhomie and of kindly feeling toward the author's professional brethren. It were well indeed if more such books were written by physicians for physicians.

It is a fine thing for a man to be able, as has this author, who chooses for the present not to disclose his name, to be able to set some time apart from practice for the things which have nothing to do with practice. Evidently literature is a fad, a hobby with this physician; and it were well if we all had some hobby apart from practice, not necessarily literature of course. We would be all the better doctors for our hobbies. There are plenty of superb examples in other walks of life to guarantee the wisdom of this laying aside one's life work, for a congenial pastime, which would in fact be peculiar to the individual. Gladstone, for instance, was a great student of Homer; Joe Chamberlain cultivates orchids, or used to; Salisbury was very strong in electricity; Balfour is great in psychic research. Billroth was a superb pianist. And we could name some excellent musicians and lovers of music among our prominent medical men; and they are all the better physicians and surgeons for their love of this most grateful of recreations. Dr. Osler long ago advised his students to indulge in some non-professional recreation. "Do not become too deeply absorbed in your profession to exclude all outside interests. No matter what it is, have an outside hobby. When tired of anatomy, refresh your minds with Holmes, Keats, Shelley or Shakespeare." And this was good advice indeed.

The most inviting part of the book before us relates to the good example which Ambroise Pare set his contemporaries and left for his posterity. Born of working people, he went early into apprenticeship and thus escaped the deadening influence of the University of Paris. He had read Galen neither in Greek nor in Latin. For more than twenty years, off and on, he was an army surgeon, with headquarters in Paris. He had a great practice, wrote, lectured, upheld the rights of the surgeons against the physicians; attended Henri II, Francis II and many other notables; knew Vesalius; was on the side of the Huguenots and outlived, at eighty, the siege of Paris by Henri IV. "Here is one who can praise without

offence his own performances, and chronicle with proper pride his own words, and score off a fool, and relish his meat and drink; a shrewd, happy, confident, business-like gentleman, not wholly free, in a vain and cruel age, from vanity, not uncapable of cruelty, but steadily compassionate, humble, wise, and honorable; and a true lover of his country, his home, and his profession. Everybody reads Baswell and Pepys, but who reads Pare?"

"I dressed him and God cured him," is a sentiment of Pare's upon which he constantly rang changes. One of his cures was that of M. le Marquis d Curet, a very magnificent young gentleman twenty years old. The femur had been fractured from a gunshot wound; for seven months he had been slowly dying, though attended by many doctors. Pare, at that time sixty years of age, was sent for; to whom it seemed there was little hope. "All the same, to give him courage and good hope, I told him I would soon set him on his legs, by the grace of God, and the help of His physicians and surgeons." Pare then called a consultation; and he told his colleagues the treatment must include free incisions, fomentations, a clean bed, hot bricks and a hot bottle duly medicated, massage, a dusting powder, a plaster and a pillow for a bed-sore, a refrigerant over the heart, a head-cloth and a forehead cloth and a pomander, an opiate at night, a generous diet, a moderate allowance of wine; "and we must make artificial rain, pouring water from some high place into a cauldron, that he may hear the sound of it, whereby sleep shall be induced upon him." For the fomentations, a decoction of sage, rosemary, thyme, lavender, chamomile, melilot, and red roses boiled in white wine; for a generous diet, raw eggs, plums stewed in wine and sugar, the broth of the great pot, white meat of fowls, partridge wings, and other roast meats easy to digest, with orange, verjuice, sorrel, and bitter pomegranates; or boiled with good herbs, such as lettuce, parsley, chicory, buglass, marigold and the like. This excellent food and the well-flavored opiate, and the fragrant blend of roses, lilies, poppies, and camphor on the forehead cloth, and the good bread, all these observations most minutely detailed, were interspersed in Pare's memoirs with exhaustive observations upon pathology. Three bold incisions were made; much foul stinking pus was evacuated. The youth recovered. Note, please, that Pare was very strong in detail. He knew not only how to operate, how to be a good surgeon; he was physician, nurse, apothecary as well. No part of the healing art, no therapeutic recourse was unfamiliar to him nor neglected by him.

Our colleagues would do well indeed to put "Confessio Medici" in their gripsacks, at vacation time; a most unusual and epicurean feast will then be assured them.

A Trades-Union Tuberculosis Pavilion.—A pavilion for consumptive members of the various trades-unions of Albany is to be erected on the grounds of the Hospitals in that city, in accordance with a resolution passed by the Central Federation of Labor, appropriating \$500 for the purpose. A structure 50x20 feet is contemplated, the floors and roof built of wood, walled by canvas and capable of accommodating twelve patients.

BIBLIOGRAPHICAL

State Board Questions and Answers. By R. Max Goepf, M.D. Professor of Clinical Medicine at the Philadelphia Polyclinic; Assistant Visiting Physician to the Philadelphia General Hospital. Octavo pp. 684. Price, \$4. Philadelphia and London: W. B. Saunders Company. 1908.

This timely volume is urgently required by every candidate for State Board examination.

The material has been carefully selected, and the list may be regarded as representative of the kind of examination questions usually propounded.

While the purpose of the book is to provide a convenient compend for the use of those who wish to prepare themselves for State Board examinations, a certain order has been adopted in the arrangement of the questions, and a few simple and obvious questions have been interpolated here and there in order to maintain the continuity of the subject.

The answers are necessarily condensed as much as possible. The book is superb for its purpose.

The Principles and Practice of Hydrotherapy. A guide to the application of water in disease for students and practitioners of medicine. By Simon Baruch, M.D., Professor of Hydrotherapy in Columbia University (College of Physicians and Surgeons), New York; Medical Director of the Hydratric Department of the Riverside Association; Fellow of the New York Academy of Medicine, etc., etc. Third edition, revised and enlarged. With numerous illustrations. Octavo pp. 544. Price, \$4. New York: William Wood & Company. 1908.

We are glad to welcome a third edition of this excellent work, and to note that our great university has honored its genial author with a professorship in this important department. We remember well the first edition of Prof. Baruch's book, and the service it was to those who studied it, and it is a pleasure to compare that with the present edition and note the progress.

There can be no doubt of the necessity for such a work in view of the fact that our text books on therapeutics contain such meagre, misleading and false statements regarding this useful method of practice.

The work has been written from the standpoint of the family and hospital physician, and it becomes the duty of every conscientious physician to investigate and utilize its teachings.

The author has very properly given frequent warnings as to the study of this and other physical methods, in order to meet the encroachment of the empiric in these fields.

The Brand bath in typhoid fever is still advocated, and much space is devoted to the elucidation of a method which illustrates the value of strict compliance with technique.

The author emphasizes the importance of studying his clinical histories, as their chief value consists in suggestions of changes in procedures as they are indicated by changing conditions.

In the theoretical portion a theory of reaction has been introduced which may conciliate the contradictory views heretofore expressed and gives a clear rationale of the action of water in health as well as

in disease. The book should be in the hands of every practicing physician.

The Sexual Question. A Scientific, Psychological, Hygienic and Sociological Study for the Cultured Classes. By August Farel, M.D., Ph.D., LL.D. Formerly Professor of Psychiatry at and Director of the Insane Asylum in Zurich. English adaptation by C. F. Marshall, M.D., F.R.C.S., late Assistant Surgeon to the Hospital for Diseases of the Skin, London. Illustrated. Octavo pp. 536. New York: Rebman Company.

This most important and interesting work is the result of long experience and vast study. It includes the study of nature and the study of the psychology of man in health and in disease.

It harmonizes the aspirations of human nature and the data of the sociology of the different human races, and the different epochs of history, with the results of natural science, and the laws of mental and sexual evolution, which these have revealed to us, and is a task which has become more and more necessary at the present day.

The subject which has generally been neglected has been studied from all points of view.

The book cannot fail to be instructive and useful.

Adenomyoma of the Uterus. By Thomas Stephen Cullen, Associate Professor of Gynecology in the Johns Hopkins University; Associate in Gynecology in the Johns Hopkins Hospital. Illustrated. Large octavo pp. 270. Price, \$5. Philadelphia and London: W. B. Saunders Company. 1908.

The material for this study has been obtained mostly from Johns Hopkins Hospital, where over ninety adenomyomata of various kinds in the uterus have been found.

The author says that while endeavoring to ascertain the method of development of adenomyomata he has likewise been trying to determine how these growths can be recognized clinically. It seems that diffuse adenomyomata has a fairly definite clinical history of its own and that in the majority of cases it can be diagnosed with a relative degree of certainty.

The work is superbly published, and by an arrangement of type in different sizes the study is made easy, provided the excellent illustrations are carefully taken into account.

The gynecologist will thoroughly appreciate the undertaking.

The Riddle of Personality. By H. Addington Bruce. 12mo. pp. 247. New York: Moffat, Yarn & Company. 1908.

This book has been written for the purpose of throwing a scientific light on the nature and possibilities of human personality.

An attempt has been made to correlate the discoveries of the psychical researchers and the psychopathologists with a view to showing that instead of undermining the long-cherished faith in the immortality of man, the results of their inquiries and experiments confirm and strengthen it.

It is an attempt to elucidate for the non-scientific reader the question of the hidden resources of personality, and the possibility of employing them to heal the individual and strengthen the race.

The subject will be found interesting and well treated.

CORRESPONDENCE

DISEASES PECULIAR TO PHYSICIANS.

To the Editor New York MEDICAL TIMES:

It is my custom to scan the fair pages of the MEDICAL TIMES the first week of its appearance, always with profit and pleasure. But its issue for last April, for some cause or other, escaped my attention until recently. That accounts for the tardiness of this comment upon one of your excellent editorials.

Referring to Dr. R. G. Curtin's article on "Diseases Peculiar to Physicians," you appear to attach more importance to the maladies of physicians than the subject warrants. The average life of physicians has been during the last fifty years of my observation next to that of philosophers, namely, 68 years, the philosophers' average age being 75 years. These figures were collected by me thirty years ago, and I cannot believe that the average length of life of members of the profession has decreased or is decreasing these modern times, while the average length of life of people generally is increasing.

The late Dr. Madden, of England, in his interesting book on the "Infirmities of Genius," which was published half a century ago, gives some interesting statistics on this subject which will not be out of place here. According to his figures the average age of natural philosophers was 75 years; moral philosophers, 70 years; authors on law and jurisprudence, 68 years; medical authors, 68 years. These figures are based on an average of about 1,400 persons. The figures of Mr. Lombard, of Geneva, published about the same time of Dr. Madden's, give results that do not differ much from those of the latter. All the writers on the subject of longevity, whom I used to consult, among them Eichhorn, Huet, Winslow, Ray, Caldwell and others that escape my memory for the moment, write in the opinion of the salutary influence of professional life upon longevity and rank the average life of the physician and clergyman next to that of philosophers and literary men. Men of science, literature and philosophy of antiquity were noted for long life. And it is certainly a fallacy to suppose that ardent devotion to the work of the medical profession, with the studies in the field of science and literature which it involves, has any tendency to shorten life.

It may not be uninteresting to mention a few noted examples of the wholesome influence of literary work on longevity:

Kant and Stowe, both hard workers and thinkers, lived to be eighty. Hobbs reached the age of ninety-one. Landner, the learned author of the "Credibility," etc., reached the age of eighty-four. Binney (lawyer) died at ninety-three. Gladstone, at eighty-four. Hahnemann, at eighty-eight. Lanfranc, eighty-three. Huet, a most indefatigable worker, ninety-one. Virchow lived to be above eighty. Blumenbach lived to be about ninety. The learned Allatias died at eighty-three. Montfalcon, at eighty-seven. Carsten Niebuhn, the celebrated traveler, died at eighty-two. Reid, the celebrated metaphysician, lived to be eighty-six. Lord Kames died at eighty-six. The theologian, Blair, lived to be eighty-two. Jacques Sismond, a learned Frenchman, lived to be ninety-two. The latter died in 1661, but French savants of to-day speak of him as one of the most learned

men that ever honored France.

I have known many physicians during my professional experience of nearly fifty years, busy, hard-working men, who knew books as well as their art, that had not been laid up a day in fifty years of practice. I do not believe, or better say I have no reason to believe, that physicians have maladies peculiar to themselves—except those incidental to infection—and so, with perfect respect to our colleague, Dr. Curtin, I am glad to differ from the conclusion of the symposium to which you refer.

DAVID ALLYN GORTON, M.D.

Brooklyn, May 31.

"THE MAN ON THE OUTSIDE."

To the Editor of the MEDICAL TIMES:

In the June issue of the Times a correspondent cites various possible reasons as to why I am not a member of a medical society, but overlooks the one and only reason why I have not applied for such membership, viz.: that I cannot afford it. I can imagine his "pooh pooh" at such a trivial reason, but such is the actual fact. I would not have offered an excuse but for the letter following his communication, which discusses the action of a county medical society, and reminds me of my own experience.

I graduated from a reputable New York college and registered in New York County before the Board of Regents was established. I was thus fully qualified to practice in New York County, and had complied with all the then requirements of the law. I also joined one of the existing medical associations, resigning therefrom when I left the State.

Some time ago, when I started practice in one of the boroughs of Greater New York the medical society took an interest in me, and I found I was obliged to send my diploma to the Board of Regents for indorsement before I could practice in any other part of New York City than the borough in which I originally registered. This formality has been complied with, and I can now register in any county in New York State. The medical society has looked after me carefully and shown me that a law-abiding citizen and physician must comply with every quibble in order to practice medicine, and that is right, as far as it goes.

On the other hand, I have reported to a medical society cases of drug clerks violating the law to the extent even of calling on patients at their homes, and cases of violation of the Midwifery Law. But these matters do not seem to concern the society. Having, thus, no redress, I am compelled to take the overflow from the drug stores and, therefore, cannot afford the membership fee in a society that insists on my registering in its particular locality in order that I may be allowed to compete with non-graduates and non-licentiates.

Truly yours,

"MAN ON THE OUTSIDE."

THE AUTOMOBILE FOR THE PHYSICIAN.

To the Editor of the MEDICAL TIMES:

Recent discussion, in your columns, of the automobile as related to the physician, develops a great many interesting points.

I have been considerably surprised, however, to note the fact that the gas car holds the center of the

stage, and that the merits of the electric have not been adequately recognized. This is undoubtedly due to the fact that it is much easier to fill a gasoline tank on short notice than to charge a storage battery.

But, as a matter of fact, does not the physician, making his calls in the slow-going horse and buggy, get an exaggerated idea of the extent of his daily travels?

It is my observation that he does and that he never realizes it until he gets an automobile. Twenty to twenty-five miles a day is much more than the average daily distance traveled by physicians with a general practice. So an electric giving 25 to 50 miles per battery charge gives all the mileage that a physician needs. In my own case, I keep my machine fairly busy, in and around Indianapolis, and I have yet to find that the electric gives insufficient mileage.

A fallacy that has made considerable headway, and has militated against the electric, is the notion that electric mileage decreases heavily when pavements are left behind. The spreading of this story, I believe, is due to the fact that many people love to repeat automobile talk without knowing whether the tale has foundation in fact. The truth is that pneumatic tires cling to asphalt pavements tenaciously, and an electric reaches its highest efficiency on good, well-packed, country roads.

Neither is there any real cause to fear exhaustion of current by reason of having to climb any ordinary percentage of hills. Electrics have negotiated some steep hills in this vicinity and in some instances have still managed to travel over 75 miles on the one charge of current. Of course, where the physician's daily route takes in an abundance of deep sand or mud, an electric is not to be recommended, but where roads are fairly good the electric gives all the mileage necessary.

It is one thing to theorize about electric limitations and another thing to learn electric ability, as I have through a good many years of experience, in all seasons. I can readily believe that there are localities where snow drifts in midwinter, or chronic conditions of deep sand or mud, would eliminate the electric, even as it does the gas car in many instances, but this ought not to weigh against the electric in the immense field where it is able to give entire satisfaction.

Of course, the foregoing applies to the electric only as used for professional purposes. The physician would not use his horses for pleasure driving to such an extent as to jeopardize their fitness for use in making professional calls. Neither can a physician take long pleasure runs in a gas car without risking the constant likelihood of sending it to the repair shop. A physician's car is unlike those of other owners in that constant readiness for service is essential. To insure this preparedness, it surely is not logical to attempt undue social activity in any vehicle intended for professional service.

But by the same token, no vehicle that I know of is so dependable for constant service, so little likely to be out of order, as the electric automobile.

It is intensely simple, has no delicate or complicated parts, doesn't have to be tinkered with. Push a lever and it starts. Pull the lever back and it stops. It has no spark plugs to foul, no valves to grind, no gears to strip—none of the usual automobile wor-

ries and uncertainties. Summer or winter, day in and day out it is ready to go. When it needs attention—as all vehicles do—repairs are simple and quickly made. Its driver does not need to be a mechanic. It can be confidently operated by men or women who have neither time nor inclination to pry around in rather complicated machinery seeking the elusive cause of trouble, and this feature of being able to dispense with a chauffeur contributes greatly to comfort, cleanliness and, most of all, to the economy of operation. It applies equally well to the case of horse-drawn vehicles, since at least one man is necessary to look after stable, equipment, harnessing, driving, etc. In the one case, the saving effected amounts to from \$10 to \$25 per week, in the other from \$6 to \$10.

Then there is the immense factor of cleanliness. It has seemed to me to be objectionable to enter the presence of a patient covered with dust, and in some instances oil and grease and reeking of gasoline. It is to say the least undesirable, and, I am almost tempted to add, frequently unavoidable, when using anything but an electric. Yours truly,

O. G. PFAFF.

Indianapolis, Ind., June 6, 1908.

A Medical Crusade.—An article concerning his work in Labrador which Dr. Grenfell contributed to the Boston Transcript is very agreeable midsummer reading for us, in this part of the world. During the last winter he and his colleague, the resident surgeon of the hospital, have been able to improve their medical work greatly through the help of an American surgeon, who made a 300-mile tour to the westward with their first team. A campaign was begun against spitting on floors, at windows that won't open, and upon accumulated rubbish. Many school children have taken prizes for respecting a health catechism without a mistake. For some years past remnants and unusable garments have been sent to Dr. Grenfell's station; and the poorer women have been paid to dye these and make them into "poke" mats for the floors of the cottages about. These mats are bright and tidy and washable. Into their center pieces are now woven the words "don't spit," in lieu of the traditional flowering plant or the stereotyped domestic animal. Children cannot upbraid their elders, who may be visiting their house, for this habit; but they can and do drag the mat in front of the offender's seat—and this usually suffices. A winter funeral is a scene unusually pathetic. In that season everyone is able to attend, "and the whole mise en scene when the cortege has to wind its way across the frozen ice to the graveyard which lies five feet or more under snow is doubly impressive. The last funeral was that of the mother of a large family of children. The day was exceptionally cold, and a bleak wind almost obscured in snowdrift the long irregular line of black figures that followed the poor coffin which was hauled on a dog sleigh across the harbor. The heart-broken group around the frozen grave shivering in the biting wind while the last solemn words of the service were being read, made our hold on life seem so precarious that the oft-repeated warnings against this insidious enemy, the white plague, were uppermost in many of our minds."

RETROSPECTIVE

The Chinese Government, states the Sun, is very much in earnest in its efforts to suppress the opium evil. Its latest edict on the subject provides for an investigation of its extent and a full report on the steps that have been taken by the provincial authorities to reduce the production and consumption of opium. There are excellent reasons why China is eager to demonstrate her good faith in this crusade and her ability to cope with the problem. Great Britain has agreed to reduce the opium export from India to China for three years by one-tenth of the average amount exported during the last five years, provided the import into China from Persia and other foreign countries is limited to the same degree. This average export has been 51,000 chests a year. Great Britain has further promised that at the end of the three years she will continue her reduction of Indian exports, provided that China shall give good proof that she is successfully reducing the internal production and consumption of opium in her own territory. The outsider, who views this matter from our distant perspective would wonder why Christian England which is so fond of sending out missionaries to preach justice and humanity does not at once stop her very pernicious exports of opium into China; why indeed she has ever permitted her people to introduce this substance, by which the Chinese people are so degraded. It evidently devolves upon China, however, to prove not only that she will fight the evil but also that she can do so effectively; the task is certainly stupendous and very embarrassing. The production of home grown opium is now about ten times the foreign importation. The government tax on the home product is annually about \$35,000,000; and to wipe out this source of revenue in the present condition of the Chinese exchequer is at least inconvenient. Furthermore, the difficulty of stopping the cultivation of the poppy will be immense, especially in the distant provinces where it is now a staple product. China certainly deserves the sympathetic support of all nations in her efforts to destroy the deep rooted evil which is sapping her national strength and which was in great measure originally foisted upon her by sanctimonious England. If she succeeds in her present plans opium will cease to be grown within her border by 1917.

General Paralysis, states F. W. Molt (Practitioner, Jan., '08), is primarily due to acquired or hereditary syphilis. If the latter disease cannot be proved by the history, or by the appearances we must not conclude it has not existed. The absolute exclusion of syphilis may make us practically certain the case is not one of general paralysis or tabes; in a few cases one can either prove the possibility of specific infection or one fairly never doubts whether it can be excluded. A typical case of general paralysis is easy to recognize; but not so in the early prodromal stages, in the atypical, the juvenile cases and those complicated with other diseases—alcoholism, lead poisoning, arterio-sclerosis and syphilitic brain. Diagnosis is especially difficult between neurasthenia and the prodromal stage of general paralysis; for it is the neurasthenic, the subject of syphilis, who is especially liable to develop general paralysis. Most much oftener in the male. There are different forms.

much often in the male. There are different forms. The term paralysis is incorrect; one should speak of paresis. A gross paralytic condition points rather away from general paralysis. In the prodromal stage the only noteworthy symptoms are those apparent to the patient's familiars; his moral and esthetic feelings may have changed; his character may have become irritable, morose, depressed and changeable in mood; he may become apprehensive and filled with morbid fears; or he has become neglectful of his home and indulges new and unusual ambitions; his spirits may become unusually exuberant; he may become unduly extravagant; there may be sexual hyperesthesia with comparative impotence, resulting in strained marital relations, immorality, promiscuous intercourse, exhibitionism and perhaps sexual perversion. There may first appear giddiness, migraine-like attacks, convulsive seizures with or without loss of consciousness, temporary loss of speech, with subsequently no other indication of the serious brain lesion responsible for these symptoms. The pupils may give the most valuable objective sign; their inequality, a sluggish reaction to light, on the Argyll-Robertson pupil (irresponsive to light while active to accommodation) would certainly indicate tabes. The irregular pupils seem to be an important sign of early general paralysis. Lumbar puncture should determine whether there is functional or organic disease of the nervous mechanism; for if the cerebro-spinal fluid be centrifuged and a deposit found consisting of lymphocytes and plasma cells, neurasthenia, hysteria and other pure psychoses can be excluded. The cellular elements noted point to chronic organic disease of the central nervous system—tabes, syphilis or tubercular meningitis. The prognosis is bad, but remissions may occasionally occur; this temporary quiescence may give rise to claims of cure, when the patient is kept from drink, sexual excesses and other forms of exhausting excitement.

Benign Tumors of the Rectum comprise growths which generally have a pedunculated attachment and a pendulous extremity, states N. A. Brax (N. Y. Med. Jour., Mch. 7, '08); they are more common in women and children. They vary in size, shape and form; may be single or multiple; are usually attached by a single stem, but may have more attachments; they are known as polyps because they are attached to the rectal wall by a pedicle or stalk. The adenoma is the most frequent, being very common in childhood and very rare in adult life; they are soft when composed of mucous tissue, while those made up of both mucous membrane and submucous connective tissue are generally hard and clinically are termed fibro-adenoma; they are generally the size of a large cherry, have the color of the rectal tissue, except when they protrude at the anus when they are purple-red; they are generally attached to the posterior rectal wall, within reach of the finger. A small adenoma may exist for a long time without occasional symptoms. As a rule, however, hemorrhage occurs from the abraded surface of the growth, produced by the passage of hard scybalous masses over it. Blood from the rectum of a child under ten, with or without straining, generally indicates a polypus; in such cases we sweep the finger around the entire circumference of the oval region as far as it can be reached.

Growths higher up in the rectum can only be located under anaesthesia. Uolypi sometimes protrude at stool; and thus are mistaken for and treated as hemorrhoids. The next most common benign tumor in the rectum is the fibroma, or fibrous polypus, which is usually situated within the first two inches of the rectum and varies in size from that of a hazel nut to a walnut; these are usually adult growths, multiple in character. They may protrude at stool and be mistaken for internal piles. Such a growth can readily be diagnosed by the finger. A small fibrous polypus may exist some time without any untoward effect; however, it will bring on spasms of the spincter and levatores ani, which ultimately become hypertrophied and indurated. The villous tumor is a rare rectal growth; it may reach the size of an orange and has a handlike, short, fleshy pedicle; its surface is lobulated, giving it a cauliflower appearance. It is found only in adults and the aged who as a rule complain of diarrhea on account of the watery discharge from the bowel, which makes them go frequently to stool. These patients also complain of dull, aching pains in the rectum, radiating to the sacrum; they generally lose flesh and strength and have a cachectic appearance. Digital exploration will easily detect a growth attached to some part of the bowel by a broad pedicle, generally on the posterior wall.

Hemorrhagic Typhoid Fever is very rare except in childhood and adolescence, states Woodward (Arch. Pediat.), who reports two cases. A girl aged eleven had had typhoid some years previously. On the 14th day there was copious epistaxis, which was repeated on the 22nd and 29th days. There was also some bleeding from the gums on the 22nd. On two occasions there was slight haemoptyses. Purpuric spots were from time to time noted on various parts of the body; there was complete recovery. Two years later she had a third attack of typhoid, which was then uncomplicated. Woodward's second case was of a hitherto healthy girl, aged seven, who on the 15th day had much bleeding from the nose and anus. On the 16th day there were several ecchymotic spots on the arms, legs and back, and bleeding from small ulcers on the anus, vagina and scalp. Subsequently bleeding took place from fissures on the knees; and purpuric spots appeared on the forehead. On the 17th and 18th days tarry stools were passed. On the 23rd the child became suddenly cyanosed and died. The autopsy showed healing ulceration of Peyer's patches and an ante-mortem clot in the left ventricle with branches extending into the pulmonary vessels.

The Fight Against the Mosquito.—The Health Department is uniting with the port authorities to prevent the breeding of mosquitoes in the regions in and about this city during the present summer. It is expected that by means of co-operation the swamp land along the entire shore front of Staten Island will be drained. All such breeding places are being destroyed so far as is possible with the appropriations which are available. Health Commissioner Darlington hopes in this way to lessen year by year the number of malarial cases in the city. The marshes at the head of Little Neck Bay, the swamps of Flushing and Queens and the meadows about Dyker Beach Park, all on Long Island, parts of Staten

Island and a small section immediately about Kingsbridge are especially receiving attention. Dr. Doty, health officer of the Port of New York, has made a special study of the mosquito, and has described most interestingly in the N. Y. State Medical Journal the work which he and his associates recently carried on in Staten Island and the unusual results obtained.

The Functional Power of the Heart is estimated in various ways (P. C. Franze, N. Y. Med. Jour., Mch. 21, '08. In absolute insufficiency there is generally fall of blood pressure. Mere fall of blood pressure is, however, no indication of cardiac weakness; nor is high pressure necessarily a sign of a strong heart. Graupner has devised a method of utilizing the alterations in blood pressure after specialized exercises in certain groups of muscles as an aid in estimating the heart's power. The frequency, rhythm and volume of the pulse are subject to nervous influences; and are therefore quite useless in themselves as indicators of the heart's strength. Dyspnoea while at rest would indicate cardiac failure; its absence, however, is no guarantee of a sound heart. Scanty urine with high specific gravity and albuminuria would indicate a weak heart if all other sources are excluded. But the absence of these signs would not necessarily indicate a sound heart. When the lungs are apparently normal cyanosis is very indicative of a weak heart. The heart of sufficient functional capacity is non-dilated; and begins to dilate with commencing failing of compensation. The size of the cardiac diagram is to some degree an aid to diagnosing the functional activity of the organ; for this purpose only the most exact measurements can be relied on, such as are possible by skiagraphy. There is after all no absolutely exact way to determine the functional power of the heart.

Tuberculous meningitis is rarely a complication of pulmonary tuberculosis in the adult, but it is found more frequently in children between the second and seventh year. The child usually shows symptoms of failing health for some time. This may extend over a period of three or four weeks, states Pottenger in his indispensable work on Pulmonary Tuberculosis. Tubercles form slowly at times; and not infrequently remain stationary in their growth for prolonged periods. The child loses its appetite, becomes peevish, irritable, does not care to play, loses weight, sleeps poorly and may cry out during sleep. After this prodromal stage the symptoms become more pronounced. Headache, vomiting and fever appear. The headache may be either intermittent or constant. It sometimes becomes so severe that the child will utter a peculiar scream which is characteristic of this disease. The temperature is elevated, the respiration regular and the pulse slow. The child shows rapid emaciation and usually lapses into a somnolent condition. Sometimes convulsions appear. When meningitis occurs as a complication of pulmonary tuberculosis the symptoms are not far different. The patient becomes nervous and irritable, loses appetite, sleeps poorly (insomnia may be marked), complains of headache which is often intense, usually shows a dilated pupil and may become delirious or even maniacal. The temperature is elevated; before death stupor intervenes. Treatment is purely symptomatic. Bowels should be kept open; headache relieved; an

ice cap is often of value; bromides are helpful; phenacetin or morphin will usually be necessary to allay the intense pain. Intracranial pressure may require lumbar punctures.

A special form of gastric displacement and dilatation is associated with periodic attacks of very acute pain, relieved only if the patient can vomit, but usually accompanied by an inability to do so (T. S. Short, Brit. Med. Jour., Jan. 18, '08). Between the painful attacks discomfort, especially flatulence, occurs, the latter is evidenced by distention and audible rumblings. There is also a want of proper assimilation, as manifested by inanition, debility and depressed spirits. There is here dilatation with downward displacement of the stomach. The condition is likely to be confounded with ulcer, either gastric or duodenal. The pain of gastric ulcer is much more continuous; it may not be present at all, but it may be in evidence several times a day; it follows the ingestion of food; vomiting relieves it for a short time only, and not for several days, as is likely in dilatation. The pain of ulcer is also not so acute as a rule. The tenderness in ulcer cases is localized; in dilatation it is spread over the epigastrium. The recumbent position relieves the pain of dilatation much more readily than that of ulcer. If the ulcer is posterior the supine position will increase the pain. Hematemesis or melena of course point to ulcer; but the diagnosis is difficult when there has not been bleeding. The pain of duodenal ulcer generally comes on some time after the food intake, and is more persistent. The position of the pain over the duodenum and the occurrence of melena help the diagnosis, which is, however, very difficult in the absence of these symptoms. The most difficult diagnosis is where an ulcer of long standing has been followed by fibrous growth in the scar and puckering with alteration in the shape of the stomach. Should this occur near the pylorus some obstruction may result and dilatation may follow; or a shape approximating hour-glass contraction may be present. Exploration is the certain means of diagnosing such a condition.

The Inefficiency of Chauffeurs receives comment by the British Medical Journal. It is useless to multiply traffic regulations and to increase penalties for breaches of speed rules or to perfect the driving gear of motor cars unless steps are taken at the same time to insure that no one can legally take charge of a motor car who is not fit in every way for such occupation. The English law at present presupposes that application for a license to drive a motor car is ipse facto proof of adequate efficiency; no license can be refused an applicant who is more than seventeen. Once licensed an incapable driver may commit many breaches of regulations and incidentally maim and kill a good many people before his license is rescinded, and before any local authority is entitled to refuse him a new one.

Epithelioma is discussed by L. D. Bulkley and H. H. Janeway (Med. Rec., Mch. 21, '08) who conclude that the most frequent form of cancer which the dermatologist must treat is both pathologically and clinically, quite a different growth in its relatively benign course, from the usual conception of cancer. It occurs chiefly about the face, where radical operative procedures are apt to produce serious and most

discomforting deformities. Many cases may be permanently cured by caustic pastes; but these are at times disappointing, and may aggravate the original lesion. The curette cannot be depended upon alone, but requires additional destructive agents to the base left after operation. The proper use of the X-ray offers a safe (and in cases that have not been grossly neglected or maltreated) a sure method of cure, with the least amount of deformity. In cases where knowledge and experience show that these lighter measures are not likely to avail in checking the course of the disease, there should be complete surgical removal; this method has been shown to be permanently successful in a fair proportion of cases.

Intussusception in infants and children, in which the diagnosis can be made, and which are not already very feeble, should be given one forcible oil enema under anesthesia on the operating table. This should be followed by laparotomy whether the tumor disappears or not, declares Codman (Bost. Med. and Surg. Jour.). Before using efforts at reduction forcible enough to cause increased shock we should, if we decide upon doing so at all, carry out reduction up to the limit of the patient's strength. If reduction is considered too doubtful resection with double enterostomy is the choice when the mass is wholly composed either of small intestine or of large intestine, and the mechanical conditions make resection easy. If reduction is abandoned and the mass is wholly composed of large intestine and resection cannot readily be performed, excision of the intussusception is indicated by Barker's or Mikulicz's method. In irreducible cases in which the small intestine is invaginated into the large, simple enterostomy without resection and resection of the mass should be abandoned and replaced by ligation of the imparted mesentery and enterostomy. In infants, where there is already evidence of severe exhaustion, ligation and enterostomy could probably be done very rapidly and with less operative shock than even a successful reduction, provided the operator from the beginning abandoned any idea of reduction.

Mechanico Therapeutics.—Mrs. Ray Matshak has in memory of her husband equipped a department for surgical mechanico therapeutics at the Vanderbilt Clinic at the College of Physicians and Surgeons. Columbia is thus the first university in the United States to have such an equipment for the benefit of its medical students. There are machines for moving and exercising every joint; they consist of devices which have been perfected so that by means of them convalescence may be promoted after diseases, injuries or operations. Mechanico-therapy is both an active and a passive system; it is used to soften stiff joints and to strengthen muscles weakened by injury or paralysis. If a patient is recovering from the effects of a broken arm, leg or shoulder; if he has a flesh wound over which the skin is tightening; or if one of his joints is growing stiff after a sprain or break a mechanico-therapeutic machine is called into use. If a patient is too weak to work actively with the apparatus his limb is strapped to it and the needed motion is supplied by means of a motor. The first metropolitan institution of this kind was established by Dr. Charles H. Jaeger at the German Hospital one year ago, since which time several thousand patients have there been treated.

Dr. Edith Pechey Phipson, who died recently in England, was one of the first and of the ablest physicians in that country. In 1869, when the medical education of women was under discussion in Edinburgh, she was one of five female students who matriculated, states the *Evening Post*. She was, by the excellence of her examination papers in chemistry, really entitled to the Hope scholarship, but this was refused to her solely on account of her sex. However, the public indignation excited by this episode greatly helped the cause of the woman, and paved the way for the triumphs which came many years after in the opening of the University of Edinburgh to all women. In 1877 Miss Pechey took a diploma from the Irish College of Physicians, which led the way in the admission of women, and she also obtained the degree in medicine of the University of Bern, as no English university would at that time give a degree to women. For a few years she practiced in Leeds, but on the foundation of the Kamar Hospital for Women in Bombay in 1882 she was appointed its senior physician, and did superb service in organizing its extensive work, greatly revolutionizing the standard of hospital nursing in India. She had the unexampled honor of being appointed a member of the Senate of Bombay university. After about ten years of greatly appreciated but very hard work the strain on her health compelled her resignation. She then married Mr. Herbert Phipson, whose scientific work and interests formed a strong bond with her own. To the end of her life she was keenly interested in scientific and social work and was especially instrumental in establishing a philanthropic sanatorium in the Deccan.

Measuring Minute Distances.—The sensitiveness of the human organism is gross indeed, states the *Chicago Tribune*, by comparison with that of certain machines. A photograph plate coupled with a telescope discovers millions of stars whose light the retina does not appreciate. The microphone makes the inaudible tread of a fly sound like the tramp of cavalry horses. The human heat sense cannot realize a temperature difference beyond one-fifth of a degree. But the barometer being 200,000 times as sensitive as the skin, notes a difference of a millionth of a degree. A galvanometer flexes its finger at a current generated by simply deforming a drop of mercury so as to press it out of a spherical shape into that of an egg. The amount of work done by the wink of an eye equals 100,000,000,000 of the winks marked on the scale of a delicate instrument; but even this is exceeded by the "coherers" of Branley of Paris, by which the Hertz waves of wireless telegraphy are caught in their pulsings through space. The range of impressions which we get from lifting an object is very small; an ordinary chemist's balance is some million times as sensitive and weighs down the 200th part of a milligram. Such instruments reveal much more to us than if they were not in existence; and they evidence that our sense organs give us reports of but a comparatively small number of comparatively gross stimuli.

Oesophageal Stricture.—P. M. Revidtzev (*Semaine Medic.*, Feb. 19, '08) notes that swallowing a mouthful of liquid elicits two distinct sounds: the first is due to the muscles during the act of deglutition; the second sound, occurring about seven sec-

onds later, is due to the liquid being propelled into the stomach by the peristalsis of the lower part of the oesophagus. If further attempt at deglutition be made (without swallowing anything) some of the fluid held by the stricture will be forced into the stomach by which means the second sound will be again produced. Revidtzev's sign may indicate stricture before there is any evidence of its presence. (The best means of diagnosis is the use of the oesophageal bougie.)

The Mystery of Suffering has been a difficulty with many thinkers since the beginning of time; that a certain amount of suffering is salutary is evidenced by Bishop Wilberforce's story of a butterfly in Ceylon which was recently retold in an English periodical. A man of science, watching under a microscope the difficulty a butterfly had to break from its chrysalis, decided to cut delicately certain impediments which would enable it to release itself without difficulty. The result was that instead of emerging strong and large and of beautiful coloring the butterfly was a frail little creature with no strength in its body and no color in its wings. The struggle from which it had been relieved contained the very source of its strength and beauty.

Punch amuses itself with the present septomania and germophobia which is sweeping the entire civilized world into a condition of microbic hysteria. The following routine is advised: On rising in the morning be careful to stop in bed; when taking breakfast be sure to keep your mouth closed; when the desire to go to business attacks you, fight it off and stay at home; when lunching at a restaurant, be careful not to eat anything, and if you must take a holiday spend it in the sea, for salt water is an ideal disinfectant. If you don't do anything—eat, drink or breathe—and are careful to wear clothes soaked in bichloride of mercury or formaldehyde, there is little danger of septic infection. Anyone who will follow these rules need not worry about his health.

"Diet incidentally provides all women and many men with a plausible but paltry excuse for minding other people's business. When after much searching of heart and much reading of medical dictionaries (which even the authors scarcely profess to understand), a man has found a diet which suits him, it is all Lombard street to a China orange that his identical diet would stand or surfeit his next door neighbor. Let the young men who cannot digest beef by all means eat something else, but not talk about it; and though they may never aspire even to sublime mediocrity they can at least learn for themselves before they are of age to eat what suits them, and above all to keep their fads and symptoms to themselves." Thus discourses a writer who astutely preserves his anonymity in the *Saturday Review*.

Progressive Medicine, a quarterly digest of advances, discoveries and improvements in the Medical and Surgical Sciences, edited by Hobart Amory Hare, M.D., and H. R. M. Landis, M.D., and published by Lea and Febiger, Philadelphia and New York, has been received for June. It treats of the subjects of hernia, surgery of the abdomen, exclusive of hernia, gynecology, diseases of the blood, diathetic and metabolic diseases, diseases of the spleen, thyroid gland and lymphatic system and of ophthalmology. As usual it is a most valuable publication.

MISCELLANY

A hustling physician left Chicago and got to a Pittsburg bedside in eight and a half hours, killing a man on the way.

Tuberculous disease is rare among the whites in Jamaica; the negroes, when they contract it, however, quickly succumb in that island as elsewhere.

Appendicitis is said to be extremely rare among the Chinese, although they are much given to bolting food and eating of indigestible victuals, and often suffer from exposure to cold, excessive exertion and other evils which would predispose to the disease.

County Laboratories.—Governor Hughes has signed a bill authorizing boards of supervisors to establish such laboratories each in charge of a trained county bacteriologist, and such assistants as may be required, compensation for such officers to be fixed by the board.

The best prophylaxis against summer diarrhea is a well baby properly fed all the year around, declares Dr. C. S. Kerley. A child who has repeated attacks of intestinal indigestion during the winter and spring is very apt to have a great deal of trouble during the following summer.

Dr. John Brown's three volumes entitled "Spare Hours" have gone through more than a score of editions. The second series contains fine sterling lay sermons on health, on the relations between doctors and patients and children; and his best known work "Rob and His Friends."

Auto Used as an Ambulance.—It is a pleasure to note that not all automobilists are conscienceless. A ten-year-old boy was recently run over by an automobile owned by Mr. C. H. Hyde, who at once stopped his machine, lifted in the unconscious boy and went post haste to St. John's Hospital, Brooklyn.

Early Exploratory Laparotomy would often obviate appalling complications of hemorrhage, perforation, hour-glass contraction disabling adhesions, and malignant disease when grave gastric affections are under consideration. (W. L. Rodman, J. A. M. A., Jan. 18, '08). Laparotomy by competent surgeons is a legitimate means of diagnosis.

A "Cancer Curist" was recently tried in Paterson, New Jersey, on complaint of a patient, who declared she had paid him upward of \$3,000 for salves that were promised to cure; she had been under his care thirteen weeks. Local physicians were then called in who had to amputate her leg to save her life; since which time she has had to go on crutches.

"Hiccup," Not "Hiccough."—The former mode of spelling is made official in the "improved" manner adopted by the Columbia University Press. Fortunately one is not often required to spell this word either way. An exchange cogently observes that when one has the "hiccups" he is not in a literary mood; and when one has them he tries to forget them as quickly as possible.

Dr. Frederick P. Baetjer, of Baltimore, recently had an eye removed in the Johns Hopkins Hospital. His special work is in radio-activity and on the Roentgen rays, having begun his studies some twelve years ago. Within the last few months there began a shrivelling of the arm and hand; recently one of

his eyes became involved to the degree that an enucleation was decided upon.

Dr. J. Louis Amster, a physician practicing in the Bronx, while he was driving in October, 1906, had his carriage run into by a street car. He was thrown and dragged more than one hundred feet, three of his ribs were broken and he sustained a compound fracture of a shoulder blade. Damages against the New York City Interborough Railway Company of \$15,000 were awarded him.

All children with diarrhea, states E. E. Graham, should be kept at rest, not allowed to walk about; they may be out of doors in a hammock, baby coach or crib. Very few bedclothes are required, and a single garment of light flannel is sufficient dress for the baby. Cold hands and feet require warm clothes and stockings even in the summer. Hot water bags should be applied to the extremities. A warm bath should be given the sick infant every day for cleanliness.

House flies may be destroyed, according to Q. N. O. in the J. A. M. A., by means of powdered buhach (the flower heads of *chrysanthemum turreanum*) a pint of which is placed on a metal plate, lighted and allowed to smoulder. In a room 70x40x15 feet three pints of dead flies were some hours swept up—and burned, to make sure. Four applications during the fly season, with care regarding windows and door screens, kept the place free from flies during the season.

A New Anti-Rabic Serum is said to have been evolved by Dr. Auguste Marie, chief of the laboratory of the Pasteur Institute, who will not as yet (and very wisely) give details until he has reached definite conclusions. With the serum which Pasteur produced in 1885, and which has since been the only one in use, full immunity is not reached until nearly five weeks after the first injection. In cases of severe bites on the face the disease may develop within three weeks.

The Cornell Medical School is hereafter to admit only college graduates. President Schurman, of the University, in addressing the graduates at the end of the first decade of the medical school's existence, declared that with the coming fall terms only college graduates in arts and sciences would be admitted. "There will be a great diminution in our members, but if we can secure high quality in those who remain the loss of members will not concern us. This medical school is meant for the training not of the average candidates, but of those superior persons who are characterized by marked mental endowments and good liberal education."

Genius and Obesity.—The annals of genius, declares the Strand Magazine, are filled to overflowing with the names of men who toiled and achieved fame under a full habit. Nothing can be more unjust than the gibe about "fat and folly" and fatness and indolence. Martin Luther was as fat as Calvin was thin; Ernest Renan's obesity did not obscure his insight and brilliancy. Fatness has too long been invidiously spoken of; but an excellent retort concerning this weighty subject was made by C. H. Spurgeon, the famous preacher: People say I am fat. I am not fat. I am bone and flesh. My limbs, thank God, are amply clothed, and I am in my right mind."

HAEMATEMESIS FROM BACK-PRESSURE DUE TO HEPATIC SCLEROSIS.

PSEUDO-CLINIC BY A. L. BENEDICT, A.M., M.D.
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IT has occurred to me that, inasmuch as many published clinics are revised from the rough notes taken at the actual clinic, or are dictated after the clinic itself or are entirely "faked," it might be advisable to treat in colloquial clinical style, but without any pretense of the existence of a clinic, of certain cases seen in private practice and susceptible both of more thorough study and of better care, than are the usual cases presented in open clinic, before a class.

Patient No. 74, of 1903-4, was first seen in consultation with his family physician, Dr. W. H. Woodbury, at about 5 A. M., on account of a considerable haemorrhage from the stomach, the second in 36 hours. The patient was a German of about 45, a mason by trade, happily married and living very comfortably. His work was of high order and he had suffered little either from exposure to cold, heavy lifting and similar conditions which might have been anticipated from his work. I emphasize these points because we have not yet learned to realize that the economic possibilities of skilled manual labor are very nearly, if not quite, on a par with those of the poorer paid professions and businesses. The patient, then, had for some years enjoyed the same comforts of life as many physicians, teachers, and clergymen, and without the constant worry and social strife which often falls to the lot of those apparently more fortunately situated. The hereditary and family history was negative and the only significant points in the personal history were rather free indulgence in smoking and what was described as a moderate and occasional use of liquors, but which, on cross questioning, seemed to me to be rather excessive, involving the daily use of several glasses of beer and the occasional use of stronger drinks.

In the case of bleeding from the mouth, the first point to determine is the source of haemorrhage which we may, for practical purposes, divide in three localities: 1. Local lesions in the mouth, nose, throat, superior respiratory passages—that is, above the lungs—and oesophagus. 2. The lungs. 3. The stomach or upper intestine or other parts discharging into the stomach. The first group of sites can usually be readily determined by history of traumatism, inspection of a visible source, in the majority of instances by the small size of the haemorrhage and by various other diagnostic points which need not be entered into. You are familiar with the differential diagnosis between haemoptysis and haematemesis, which is classical. It used to surprise me that there should be mentioned, the possibility of confusing these two forms of discharge of blood. The appearances of blood vomited and of that spit up are usually so different and the examination of a lung the site of haemorrhage should reveal such gross lesions and acoustic signs, that it would seem that, even in an ignorant or unconscious patient, one should be able to differentiate between haematemesis and haemoptysis. However, I met my Waterloo last fall, in a female patient (1892-3, No. 35). (My case

numbers refer to the first appearance of a patient and are not changed from year to year. Unless one wishes to swell the numbers of cases seen, this is the better method.) In this case, I was utterly unable to locate or explain the haemorrhage and there has been no repetition, so that further opportunity for differentiation has not been afforded.

In the present case, the size of the clots, the distinct history of two haemorrhages occurring several hours apart, preceded by nausea and gastric distress and appearing as a vomiting attack, unquestionably warranted the diagnosis of haematemesis. By the way, this word should not be pronounced haematemesis, but haematémesis. I hope you have been critical enough to notice that this statement as to the occurrence of two haemorrhages and as to the diagnosis of haematemesis, is faulty in two respects, though in accordance with custom. No one can say how many real haemorrhages there were. There may have been one gradual leaking of blood although doubtless exacerbated at times to explain the formation of large clots; and haematemesis is no more a diagnosis than is heart failure, jaundice, convulsions, etc. All that we know about the case, so far, is that blood has somehow got into the stomach or, at least, into the oesophagus, and that it has been vomited either as an abnormal and more or less irritating mass or because of some condition of the stomach that would have caused the expulsion of any contents, however normal and unirritating. Of course, for the laity and for a certain class of physicians, any name that can be applied to a condition, is satisfactory and is considered to represent a diagnosis. From our standpoint, a diagnosis is not satisfactory unless it answers, as completely as possible, where, how and why, the morbid condition exists.

Let us take up the question of where first. Vomited blood usually comes from the stomach, not only in the immediate sense but in the ultimate. It may, of course, have been swallowed, either from the upper air passages, mouth, etc., from an haemoptysis or even from alimentation or medication. I emphasize this last point because, when the suspected haemorrhage is small, so that microscopic and chemic tests must be employed, they are vitiated if the patient has received bovine, ox blood, many organic preparations of iron or even meat. In this case, the swallowing of blood could easily be ruled out. A true haematemesis may be due, not only to bleeding from the wall of the stomach, but to that from the oesophagus, upper intestine, biliary passages and pancreas and occasionally from the lower bowel or adherent and perforated organs. The most remarkable case in my own experience, seen post mortem, through the courtesy of the late Henry F. Formad, B.M., in 1889, was due to an ovarian cystadenoma which had become adherent to the colon. No other communication could be found, and the search was thorough. The patient was said by her attendants to have vomited the characteristic bloody, colloid material found at necropsy throughout the alimentary canal for a week before death, but they had not recognized its character. I am inclined to believe that Dr. Formad, in spite of his generosity, regretted that he had sent an assistant to make the examination in this unique case. Duodenal haemorrhages

are so regularly aspirated into the stomach and vomited, that I do not believe it is ever possible to distinguish with absolute accuracy between them and strictly gastric haemorrhages. The old rule that duodenal haemorrhage appears in the stools, gastric in the vomitus, scarcely deserves attention. Gastric haemorrhages practically always appear in the stools and are not necessarily but only usually vomited, while duodenal ulcer results in haematemesis in at least the majority of cases.

The how and why of internal haemorrhages are always closely associated and, in cases of the nature ascribed to the present case, the where is also largely a matter of conjecture and dependent upon our diagnosis of the nature of the haemorrhage. I may say here that I do not, by any means, limit this haemorrhage to the walls of the stomach either in this or similar cases, but believe that the oesophagus, stomach and intestine are all involved in various cases of the same type and may be jointly concerned in any one case. Without speaking for others, I personally do not know enough to discriminate.

Gastric haemorrhage is commonly thought of as indicating peptic ulcer and, if the haemorrhage is at all massive, this is usually the case. Text books usually present differential diagnosis tables between "ulcer" and "cancer," overlooking the point that a bleeding cancer is almost always ulcerating, that there are many forms of ulcer of the stomach in the broad sense, that various other tumors may bleed and, especially, that the haemorrhage may be due to active or passive congestion without any true ulceration.

Among the forms of haematemesis that could readily be excluded in this case, are vicarious menstruation, acute corrosive gastritis, acute non-corrosive gastritis, traumatism by sharp particles, as tacks, bits of glass, etc., scorbutis, purpuric and other similar haemorrhages analogous to those that occur in and beneath the skin, etc. Patient No. 81, 1903-4, seen a few days after the present case, indeed, during my attendance on the former, was a little boy with acute gastritis due to dietetic errors and exacerbated by swallowing cigarette stubs. While he was said actually to have vomited fine cut tobacco and charred cigarette paper, the stringy, brownish masses shown to me and supposed by his mother and the family physician to be shreds of tobacco, were proved by microscopic examination and the haemin test, to be mucus and blood. This point is to be emphasized, as gastric haemorrhage often appears like tobacco or tobacco juice and is occasionally supposed to be tobacco, or, at least, its true nature is overlooked by physicians. This was the case in No. 16, of 1901-2, a young woman in whose case there was no suspicion of swallowing tobacco.

In the present case, the diagnosis was between cancer or other tumor and the various forms of ulcer. The amount and suddenness of the haemorrhage and the lack of a palpable tumor or of preceding symptoms, were against cancer, although this exclusion is not absolute.

As a student, I learned that acute peptic ulcer was due to local necrosis of the gastric wall, with digestion of the dead area. The necrosis was, in those days, ascribed to haemorrhagic infarction due to

some organic disease of the blood vessels. Even with the imperfect understanding of a student, it seemed to me strange that embolism, arteritis media, minute aneurism, calcification, fibroid degeneration, etc., should occur in young, neurotic persons, who did not have cerebral apoplexy, arcus senilis, hard accessible vessels and other signs of arterial degeneration and whose age would render extremely improbable, the occurrence of such changes anywhere in the body. Later my attention was called to the frequency of unsuspected ulcer and to German statistics which showed the frequency of ulcer in cadavers of middle aged and elderly persons who had not presented signs of peptic ulcer and who did not correspond at all to the classic description of those subject to massive, acute, gastric haemorrhages. It is now pretty generally conceded that acute peptic ulcer is due to spasm, not organic changes in the vessels, but there is not the general conception that should exist of an entirely different type of gastric ulcer, due to degenerative lesions. Such ulcers do not, as a rule, bleed freely, the very lesions underneath the ulcer tending to obliterate the vessels. Moreover, there is not in such cases, usually an active digestive process that would eat out the gastric tissues and leave open, bleeding vessels. Patient No. 86, of 1895-6, died in 1903 as the result of such an ulcer. It had yielded minute amounts of blood for four months but never any marked haemorrhage. The ulcer was of the size and shape of a human kidney and, just before death, it ruptured underneath the colon into the greater peritoneal cavity, allowing the cavity to become filled with water that had been drunk, but there was no conspicuous bleeding even at this time.

Our present patient was of an age and vascular condition corresponding to neither of these types. This middle-aged, phlegmatic German, was not likely to have an angiospastic ulcer, like an anaemic, worried, hysteric seamstress of 20 or 25. Neither did he present any indications of organic vascular degeneration, although such might have been present at his age.

There is another form of ulceration, combined with congestion and catarrh, often seen in alcoholics and, in its extreme degree known as mamillated stomach. There are also chronic ulcers which do not bleed freely, which probably last for long periods and which may be compared to eczematous ulcers of the skin. These are sometimes called catarrhal ulcers. It scarcely seems warrantable to try to distinguish between these ulcers as all gradations are found between them and as there is no need of using the alcoholic etiology as a basis of classification. In this patient, in spite of the alcoholic etiology, there is not the history of chronic gastric catarrh and vomiting of bloody mucus which goes with mamillated stomach. I can not exclude the so-called chronic catarrhal ulcer but there is probably something else and more, to account for the free haemorrhage.

The physical examination in this case has shown, on inspection, the pallor of haemorrhage in general. Otherwise, nothing abnormal has been found except a small liver. Here, I believe, we have the key to diagnosis. As you know, hepatic sclerosis may be produced by alcoholism, particularly steady, "mod-

erate" drinking. However, hepatic sclerosis is not always due to this vice; I frequently find it in the abstemious and often find it absent in drinkers. Hepatic sclerosis usually produces obstruction to the portal circulation. Piles are frequently present, often ascites in advanced cases, while enlarged superficial veins frequently are of diagnostic value and indicate compensatory enlargement of anastomoses between the systematic and the portal radicles. If you wish to see a caput Medusae, that is a round bunch of enormously dilated veins about the umbilicus, or tremendously enlarged abdominal veins, you will usually have to examine an old soak in a charity ward, for we rarely see such classic illustrations of back pressure in private patients. Here, you will notice a festoon of small venous twigs at about the level of the attachment of the diaphragm. This sign I have described as quite diagnostic of hepatic sclerosis. It is frequently overlooked and an English physician, whose name has escaped me, has described it as characteristic of pulmonary emphysema. These external and conspicuous signs of hepatic obstruction to the portal circulation are not easily overlooked. Few, however, realize that precisely the same conditions may exist internally. In this patient, I believe that we have internal enlarged veins, perhaps deserving the name of piles. Such internal haemorrhoids occur most typically in the stomach, often in the oesophagus, but also in the upper intestine. It is obviously difficult to prove such a condition without necropsy or to exclude the other causes of haematemesis but, taken in its entirety, this case probably represents haemorrhage from a ruptured internal varicosity, ultimately due to hepatic sclerosis. Such cases are rare, but not so rare as might be supposed from the scanty references in literature. Packard, two or three years ago, collected 60 cases from the world's literature, but I have seen about a dozen and only one of these was mentioned by Packard, as I have not yet reported my series. Moreover, all or practically all of Packard's cases were fatal and many of mine have not yet died or have died after they passed from observation. Then, too, a non-fatal case is not susceptible of absolute proof.

The differential diagnosis of these cases is not always easy. The case of angiosclerotic ulcer mentioned, occurred in a woman who had a sclerotic liver, so diagnosed during life and proved post mortem. I have seen several such cases in which the diagnosis remained in doubt. One of my hospital cases presented the characteristic coffee-ground haemorrhages of cancer and, in spite of a contracted liver, I felt that operation should be urged. The patient's brother, however, who was a physician, advised against operation and the patient lived at least long enough to rule out the suspicion of cancer. In other cases, with hepatic sclerosis, there has seemed to be no genuine varicosity, but simply chronic gastric catarrh with congestion and slight leakage of blood, whether from mamillations or not, it is impossible to say. Moreover, a case with well marked evidences of fibroid and calcified arteries elsewhere, may have a purely "catarrhal" ulcer of the stomach—unless these are always really due to minor vascular lesions—and hepatic sclerosis of some degree may coexist. Thus, the diagnosis is always difficult

and often impossible, during life.

In this case, the state of the liver, the absence of other indications and the considerable haemorrhage, point as clearly as can be expected during life, to the existence of varicosities. Just where they are situated, it is impossible to say. My first case of this nature, complained of a definite sense of constriction and stoppage of food in the oesophagus. As the stomach tube had frequently been passed, without meeting any obstacle, this complaint was regarded as subjective, yet, at necropsy, the enormous haemorrhage was traced to a widely open oesophageal varix, at about the location felt by the patient.

Treatment consists first of all in stopping haemorrhage. In cases of slight loss of blood, I have once or twice ventured to wash the stomach with hot water and hydrogen peroxid and successfully. In a case like this, with free haemorrhage, I would not dare do this. Local styptics are of little use and certainly should not be used by means of bulky solutions. Here we used fluid extract of geranium, at Dr. Woodbury's suggestion, and adrenalin. It is a delicate point to decide when the bleeding vessel is small enough to be contracted by adrenalin and when it is so large that the general rise of blood pressure will increase the haemorrhage from a vessel which cannot be closed by the physiologic action of the drug. Here the blood tension was very low, so that the patient was in a state of collapse, yet the haemorrhage or rather the vomiting of blood, though considerable, represented the collection of several hours' bleeding, so that it seemed justifiable to use adrenalin. But, some of you will object that adrenalin is destroyed by the gastric juice. I have personally had good results with it in controlling haemorrhage from peptic ulcer—of course not of massive amount—and, if you want to determine whether it is efficacious when given by the stomach, just try it instead of digitalis in your next case of ordinary circulatory weakness, without marked valvular lesion, and feel the pulse after a week, or less. The patient was also quieted with morphine and the stomach was kept empty for a week, rectal alimentation being practiced after the second day.

Several days after the first two haemorrhages, the patient had another. After another week, he was placed on a bread and milk diet, adrenalin was continued according to the state of the pulse and he was discharged at the end of the third week. Patient No. 86, of 1902-3, had a somewhat similar attack, but the case was very puzzling at the outset and a gangrenous appendix was seriously thought of. Indeed, if the conditions had been favorable, he would probably have been operated on, and even after the diagnosis of back-pressure haemorrhage was made, I was doubtful as to the state of the appendix. So desperate was the condition that hypodermoclysis was employed as a stimulant, in spite of the obvious contraindication to raising blood pressure. This patient has remained in comparatively good health for over a year.

Note on the subsequent course of the cases.

The case alluded to in the little child has presented no further symptoms.

The adult case has presented some curious features with regard to diagnosis and illustrative of the fact

that, in medical practice, a single, adequate explanation is not necessarily the only one to be sought, in spite of the rule of logic.

About eleven months after the haemorrhages, an opportunity was afforded to examine the patient, as he thought he had swallowed a piece of oyster shell. No evidence of such an accident was found, the patient was in good general health, had had no more haemorrhages, but still presented a reduced hepatic area and the festoon of varicose veins at the diaphragmatic level. Shortly afterward he developed laryngeal tuberculosis and died from this condition, about 16 months after my first examination. At necropsy, the lesions diagnosed clinically were found, but, in addition, there was a gastric cancer, near the pylorus, not producing obstruction, scirrhous, but too small to be palpable, and just beginning to break down superficially. There had been no haematemesis nor blood in the stools during the tuberculous disease, unless in passage not observed, and it must be admitted that there had not been a systematic inspection of the stools, though they had been occasionally examined.

In one sense, there had been no failure of diagnosis, in another sense, there had. Certainly, there would be no possibility of clinical diagnosis of cancer in such a case, unless by exploratory gastrotomy or by the theoretically possible but not yet feasible method of excision after introduction of an oesophageal speculum, or unless some chemic reaction for concealed cancer is discovered. The necropsy showed that there had been no error in diagnosing hepatic sclerosis, even the size of the liver corresponding accurately with the area marked out by auscultatory percussion, excepting, of course, the dome of the liver which is never recognizable by such external methods. Likewise, there was verification of the diagnosis of back pressure in the portal veins and there was precisely the catarrhal stomach with moderate varicosities, from which haemorrhages might have occurred.

But, it is possible that the cancer may have existed from the time of the first examination and that the haemorrhage may have occurred from this site alone. To criticize the clinical diagnosis as harshly as possible, we may even say that the haemorrhage may have been due solely to the cancerous process, uninfluenced by the portal back pressure.

As to the duration of the cancer, we have no knowledge and it is difficult to imagine how even a probable basis of estimation could be established. Very few opportunities are afforded for examining the inside of the stomach and, even if analogous cases could be found in sufficient number, ordinary humanity would require prompt eradication rather than the interesting observation of the subsequent course of the case. The difference in longevity and in the clinical course of cancer of the lower animals precludes drawing inferences from comparative pathologic anatomy. It is conceivable that a cancer, even of macroscopic size, may exist for a very long time before it first causes symptoms. This is certainly true of epithelial cancers although, even here, it is impossible to say when a wart or mole first becomes strictly malignant.

It is likewise conceivable that a cancer, thus situated, might ulcerate, discharge considerable quantities

of blood and then heal over, although such an occurrence after massive haemorrhage and with so long cessation of haemorrhage must be rare. Indeed, I can cite no analogous case from my own experience nor from literature.

The further hypothesis that the haemorrhage might have been entirely due to ulceration, without influence by the portal obstruction is, of course, purely academic.

Thus, for practical purposes, the necropsy may be considered to have verified the clinical diagnosis, although also presenting further evidence of disease not diagnosed and not diagnosticable clinically.

Taken by itself, this case supports the extreme surgical view that every serious internal lesion should be subjected to operation; but, of course, this is a narrow use of evidence. We must bear in mind the greater number of cases to the contrary. For example, may be mentioned a clinically almost identical case, seen in consultation with the same physician (No. of) which had at first been regarded as one of neglected inflammation of the appendix and in which a surgeon had declined to operate on account of the extreme weakness of the patient. And I may add without intending to be discourteous that this particular surgeon would operate on any kind of a case that presented the slightest reason for such intervention. This patient has remained in good health, barring the hepatic sclerosis for years.

As intimated, the former case is interesting as showing the coincidence of three distinct diseases, one usually fatal, the others almost inevitably so. It also shows that there is no necessary antagonism between tuberculosis and cancer, though it is too rare a coincidence to indicate the mutual predisposition that some have claimed.

WHO ARE THE SANE?

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PART II.

IN our intercourse among even our general acquaintances, if we are close observers, we may repeatedly note that people of accepted intelligence and level-headedness will occasionally waver in their expression of thought and equilibrium of their reasoning. They will, temporarily at least, take on a phase of biased views and acts relative to some particular subject that is manifestly a lapse from their ordinarily good sense on matters in general. Their usual personality will appear, for an interval at least, to have vacated its normal standard of elevated reliability expressive of correct mental conception and truthful attitude in the matter at issue, important or trivial, that engage the attention. We may notice also that habitually good reasoners will suddenly, for a few sentences, drop into weak and jumbled confusion by lack of continuity of their thought-force. They will more nearly talk like children whose mentality requires development of capacity for consecutive construction of their glimmering ideas. Such instances in suggestive measure resemble the varied brain lapses indicative of the minor phases of mild

dementia.

As stated in my late paper, the border-line between real sanity and delusive reasoning is so narrow that a step may cross it either way. Happily in most instances the sun of rational intellection continues to shine, but its illumination merely dimmed to view by a passing cloud of wavering thought. Withal it is fortunate that the shadow of an eclipse but moves on and then off again in astronomical nature. Many a darkened mind, obscured by weariness, by worry, by excitement, unrealized hope, delusive alcoholic intoxications, by perverse whim or prejudice, if not unduly nursed or coddled, again assumes its normal contour and function because of the timely change of attendant conditions. Common mind troubles usually grow by fostering the habit of exaggeration or brooding over dejected tendencies of thought.

I have witnessed equivocations of mental level in attempts to exploit cute and facetious ideas thrust out and suddenly remote from the line of calm reasoning on the subject on hand, though it was not above a degree of seriousness that should invoke any counterpoise of jest or satire. "Only a facetious witicism!" I perhaps hear one say. That may seem true on surface, but nevertheless it was a frivolous mal a propos break in the rationale of sober consideration. Moreover I have seen such irrelevant tendencies indulged to irrational degrees till they amounted to mere silliness that tobogganed into dementia, where cutting sarcasm, recoiling innuendo, bruising accusations of formidable forms superseded the humorous somersaults injected along the way of ordinary reasoning. The unexpected mental flashes of successive years in later life burned to ashes of lamented aberration a naturally competent mental structure. In one instance for twenty years I noted these promontions of the darkened end of total dementia. The nervous depression by illness, the distortions of fractious unregulated conscience in numerous cases unbalance the mental tone to the limit of distracting melancholia. In such cases the tendency to mania was not in itself the initiative. The mania grew as a poisonous weed springs from soil that is not preserved to beneficial uses by the cultivation of wholesome products. Climaxes of mental perversion are not usually a spontaneous development except of pyrotechnic explosion from acute shock to mind and brain and nervous equilibrium. In 1876, Centennial year, I was called in consultation to a case of this kind. The lady was from the quiet of country life unused to extraordinary sights. The weather was excessively warm. She had wearied and materially exhausted her nervous energies in hurriedly gazing at the masterly display in Philadelphia of the world's endless products of art, science and mechanical genius. In a business window also, on thronged street, was exhibited the voluptuous form representing a handsome young woman with small sandaled feet, winsome eyes, dark hair, beautifully rounded bosom which rose and sank by artificial means that resembled natural breathing. In the window opposite was exhibited the figure of a wounded and dying Zouave gasping his last. This lady of sensitive nervous temperament was profoundly impressed by this extraordinary scene. Then on her way homeward her car ran over a man and crushed him to death. The shock was overwhelming. During the following night she

became flighty in talk and act. When I reached her two days later I found her raving with mania. Her tongue was running continuously day and night without sleep. Her bedside was near by a wall of the room and which she could reach with her right hand. Waving her hand unceasingly round and round upon the wall, with every circle she would repeat with varying emphasis: "Natural breathing! Natural breathing!" She did not present evidences of fever, hard pulse, hot head indicative of mere delirium; but was endlessly restless in tumult or nervous excitability of mental upset. With the aid of bromides, valerianate of ammonia, sedative nervines, aperients and nourishments we gradually surmounted the tumult of reason, won for the patient intervals of sleep, and in about ten days she came back to herself.

I shall here merely revert to the disaster of puerperal mania because of nerve stress incident betimes to conditions of pregnancy. These regrettable interpositions of nature that overwhelm the adaptability of certain women who should never be compelled to withstand the transformations and perils of carrying a fetal life to the detriment of her mentality should be too sincerely deplored by every husband of such to ever repeat the reckless act to the extent that thrusts upon the wife the issues of mental disaster. Nervous types of women have the inherited right to be the equal of man in every exemption that safeguards their well being. To bring children into the world through gateways of gestatory lunacy is outrageous defiance to nature's grievous revolt against the condition of pregnancy in women who are constitutionally unfitted for the ordeal of reproduction. A thousand times it were wiser for the man to assume the role of a moment's ultimate self-denial than to compel risks to the woman's mentality or to propagate a family of defectives known as undesirable offspring.

It is my belief furthermore that very limited acceptance should be accorded the doctrine of emotional insanity. Since I designed this paper three months ago, an acquaintance of mine, at the time abiding in Florida, was assassinated in his bungalow while asleep one Sunday morning. Hunting and fishing are common pursuits in that certain location. The murderer was familiar with his gun. He lived next door to his victim. Early in the morning was heard to discharge four successive shots. An hour later his victim was found dead in bed. One shot had entered his eye and caused instant death. To shield her own, the mother of the shooter at once presented the plea that her son's mind had been unsettled by an attack of typhoid fever five years ago; that he had never entirely recovered mentally, and had undoubtedly shot at his human mark from irresistible impulse. So much for the mother's sheltering excuse. But it was more probable that the force of the young man's habit of shooting at mark and at game fed the impulse to draw on some resistless object. His fingers itched to pull trigger at a tempting chance then in view. Through the open window of his neighbor's abode he snuffed out a much respected human life. That murderer merits prompt execution instead of acquittal. For the deserved safety of humanity it is time to cease palliation of incentives for uncontrolled impulse to commit murder. The unresisted impulse class of criminals are of no value

or trustful use in this world of trouble. The good of the people should be looked after and cared for. If what is termed mania of impulse ceased to be accorded recognition before the laws of justice in our country, there would soon follow a consoling reduction of heart-breaking tragedies which register increasingly ignoble blots on the records of our American barbarisms. It is time for physicians to get busy at turning the morbid tide of sentiment against the pretentious falsity of irresistible impulse accurately prepared for and devilishly carried to execution of atrocious crime.

Let me revert next to the mania of jealousy. Years ago I was medical attendant in a family that always rented residences near by a certain railroad depot. This, I learned, was because the husband was an oiler of the locomotives that arrived at that station. His peculiarities were irrational. The sexual phase of his dementia was a senseless jealousy of his worthy wife above a breath of reproach, but who had lost the sexual responsiveness that usually precedes woman's menopause. The aging wife informed me that the family could never move away from that unsanitary section while the husband lived. That it was his begotten habit to run conveniently from his work in his greasy clothes between arrivals of trains, enter their residence by its rear gate—to see if he could catch any man in their house on entertaining terms with his wife, a wife who had already at severe sacrifice raised for him a family to adult life. One of the daughters was subject to epilepsy and partly imbecile. In sudden surprise I asked what he thought of learning in the kitchen that the doctor was in the parlor or upstairs with an invalid? She replied that he was never suspicious of the doctor or the rector—always declared it was all right to have the doctor—he was needed. The situation was queer. I began to study the man's pranks. I found he knew at about what hour I was expected. I would then presently hear a knock at the yard gate. Husband: "Is the doctor here yet?" Wife: "Yes, it's the doctor." Husband: "I only want to get a drink of water." Then away he would run back to his work. The wife said this habit of conduct under some trivial excuse might occur a dozen times a day. Thus feeding his mind on the green bile of unfounded suspicion, his brain increasing weakened and waxed morbid. He often declared that he would kill himself—would be found some night with throat cut—carried with him a long-bladed pocket knife edged and pointed with unrelishable threats at his industrious wife if he ever caught any "bad man" in the house—though performing no devotions himself, would actually kick his wearied wife out of bed on coldest nights in winter to compel her to first say her prayers on her knees at the bedside—charged her with thinking more of other men than of himself—would after a brief contention say: "Good-bye, now, for the last time!" then go upstairs, where his wife would later find him bent on his knees with knife in hand and with a blood-red handkerchief drawn around his neck to make her fear he had slashed his throat and was bleeding to death. His mental degeneracy was fatal. One morning at work he felt "stomach cramps;" resorted to a drug store and obtained a dose of essence of Jamaica ginger. Because of the burning inside, he imagined he was getting worse.

Then went to another drug store and doubled the dose. From store to store he repeated the ginger, till aflame with its fire and fever he was obliged to return home. His bowels were rapidly glued into a mass of inflammation of which he shortly died—forgiven of all.

The complicated psychological condition that is grounded in the sexual temperament of man or of woman, with tendency to aberration of thought that assumes the attitude of jealousy, even of glance or smile and cordial expression of civil friendship, is not easy to explain. It impairs the contentment of every conscious moment. It exaggerates the conflict between restful love and torturing distrust with every wakeful heart-throb. It paints distorted visions of possible infidelity upon the magnificence and enjoyment of every day's sunrise and sunset. In a case in which I was counseled for judicial aid, pro and con, between man and wife, I devoted months of analysis and elucidating argument to save the mind of the man from complete degeneration to settled mania, also to deliver his harassed wife from the perplexities and exhausting debasement of a bondage never dreamed of by her prior to assuming the love-inspired bonds of her marriage. He was a young widower with one living child. She a trustful, sprightly and high-spirited young woman whose interest began by tenderly pitying his experience of lonely life. Then their formal marriage followed with a revelation of exasperating, disheartening trials. He assumed to be madly inflamed by what he considered her exceptional beauty of face, of hair and figure. He conceived the idea that these, in conjunction with her eyes and cheery sociality, were entirely too fetching for the resistance of common public gaze. He caviled at her laughing moods when company was present. He demurred against her continuing to show active interest in her own relatives. Exhorted that she should demurely limit herself to her new home work. Insisted that her street gowns and home dresses must extend so high above the shoulders that her handsome neck be not revealed, and made so long in the skirt that no man could get a glimpse at her feet when walking. She must not adjust her clothing before the mirror in bedroom except the curtains be first drawn, lest a man happen to peer window-ward from the street. If walking out together, and any gentleman acquaintance approached, she was to avert her notice of him, but look instead at her husband. She was to studiously avoid the notice of men at church and never permit her "speaking eyes" to attract their attention. She was to slavishly be absorbed by himself only. If he was absent at work, she was to be always thinking of him. If she went to church without him she was to engage the time in praying for him. When leaving the home to go to business, the ever dunning quiz by him at parting was: "Will you be true to me to-day?" At every return: "Was you true to me to-day?" His mind reveled in amorous passion. Was excessive in exacting sexual service which thinned him severely in flesh, and shadowed him with troubled melancholy. Of liberal disposition, reliable at business, honest to a dot, considerate as a father, he was accepted as a model citizen. His haunting mania, being domestic, escaped public notice. I believed his mental situation worthy of candid sympathy; but

unless his drift of procedure in regard to his worthy wife could be brought to normal balance, absolute misery for her and a probable asylum for himself would ultimately be the natural outcome. It required a long test of what moderate ability I could muster to get this erring man grooved to rational comprehension, and thereby to also liberate his industrious wife from her thralldom that threatened to wreck the domestic careers of both. In the progress of my intervention, under the stress of insulted family honor, I heard a near relative of the badgered wife register a solemn vow that if the abusive husband did not abate his slurring innuendos relative to innocent gentlemen, or if he ever positively defamed her reputation, he would die—he would be nightcapped between dark and daylight in the nearby mountain silence. I did not hesitate to communicate the substance of this vow to the subject of it, to promote greater caution in his habits of speech. Though probably not entirely cured of his jealous infirmity, he became much improved generally.

A later case under my professional care, and that caused severe perplexity and grief, will close this paper. Whether or not the dementia was induced through sexual decadence I must not now try to decide. The lady was eighty years of age, of excellent family and unimpeachable moral type. Her menopause was over thirty years ago. Of later years she was much ailing with shifting rheumatism of subacute form, affecting more frequently her head and serous tissues; gaseous indigestion and flatulence; vehement attacks of influenzoid coughs; occasional turns of irritated bladder; natural tendency to torpor of bowels. Each of these uncomfortable situations could be relieved from time to time with gentle remedies. Infirmities of age gradually subdued her strength and rigid ambitions. Chagrined because she was no longer capable to give her home the fastidious care of former years, she continually rebelled against the methods of hired assistants who did not measure up to her ideals of housekeeping, hence dismissals went on in ready rotation. A sturdy, high-spirited woman, she could not condone any slovenly habit of domestic help. Her husband, near her own age, was the most devoted and helpful of men. But there came a time when it was apparent that if he spoke pleasantly with the hired woman or carried a tub up from the cellar, the wife fancied the help was too much favored; a vocal battery of criticisms were turned against the one employed, and a cause made for her prompt discharge. Considerably later on in the case the wife began to severely complain, with daily and nightly persistence, that after her long life of faithfulness, her husband was now deceiving her, was treating her shamefully, was unfaithful, gave preference to other women, was tired of her, proposed to turn her out and make room for somebody else, every time he left the house he went around the corner to meet another woman, was corresponding with girls, always went to meet the postman when expecting letters from his girls. Somewhat later on, with unabating accusations, she declared to me that she had discovered a list of names of girls from whom he intended to make choice, and then marry that one to come in and put out his old faithful wife. One day, while her husband was engaged in the kitchen, she conducted me hurriedly upstairs to show me her

husband's list of the names of girls with whom he corresponded. She even locked the doors to her room that he should not enter and see how she was exposing his duplicity. She knew the exact drawer in which she had concealed that envelope. Confidently she tossed every article in that drawer so neatly packed. Failing to find her object of special search, she fumbled from drawer to drawer, protesting that the husband must have discovered the envelope and hidden it somewhere else. Reminding her that her imagination had played this caper on her, and advising that she refrain from further search, I unlocked the doors and left her engaged in restoring to order the drawers she had disturbed lest the husband guess her pursuit of his secrets. With his heart grieving over the unhappy nature of her aberrations, if the husband endeavored to pacify her with evidences of affection, she would repel endearments with the rebuff that his caresses were only pretence. At intervals, if I could divert her thought to other subjects, especially if to matters in which she had been personally interested in past days, she would talk as sane and sensible as ever. Remedies were used for all leading symptoms as need presented. A variety of alterative tonics repeatedly. Weary of any particular taste, a change would be made. Expectorants in conjunction with infusion of flaxseed for coughs and for irritable bladder were of frequent benefit. A pine tar preparation agreed with her for paroxysms of coughing. The preparation that agreed best for her gaseous indigestion was my combination of subnitrate of bismuth, vegetable pepsin with bicarbonate of soda, a tang each of salicin and salol administered in number two capsules—because the capsules prevented any disagreeable taste in the mouth. For a year she depended on the relief of these capsules in preference to any of the specialties prepared by manufacturers that I tested for her case. Besides constipated habit which often required an aperient granule at night, there would occur turns of loose bowels. She found so much relief from a capsule of bismuth and salol with a slight impress of Dover, that she made it her rule to never be without a few doses in reserve. Meanwhile occasionally a "nervine" would be needed for a few days. Rochelle was resorted to betimes when she complained to a sense of burning in stomach and bowels. Dissolved in cold water she did not resent the flavor. For neuralgic conditions of the head, and being fortified with a fine heart action, I never hesitated to administer a combination of acetanilid, soda salicyl and caffein cit. all braced with a slight proportion of salicin. Twelve doses were about the limit I allowed before stopping. For all external applications my rule was to endorse the use of straight 95 per cent. alcohol. It was relied on because of its agreeableness, its cleanliness, its civil decency in all respects, its soothing tendency and relief of soreness and pain. But I must hasten forward.

With the dementia deepening all this phase of jealousy vanished. Her frugal thought turned to the fad of theft. Almost every day she affirmed that she missed something. Often it was an article of best clothing. Then every closet would be searched to find it, and if changed to another place, the hired housekeeper had surely taken it away. This posterosus fancy refused to be corrected. If the ar-

ticle was shown to her, she would insist that the thief had brought it back to stave off conviction. She began to desire the presence of her husband. Preferred him to give her the medicine, render every service. With mind and body weakening day by day, at last she took to her bed, where her distressed husband watched her day and night. He was hoping for a clear return of sanity and expression of endearing trust. This desire was never realized. She sank into incoherency of mumbled words and physical helplessness. She mumbled and worried with bed-clothing by the hour, unless composed to rest and sleep with medicines. For several nights the sedation of alkaloidal granules of gelsemin procured rest—in doses of from three to six granules. Then they had no effect. Having had previous experience with chloral as a hypnotic, I made this prescription—hydrate of chloral two drams, soda brom. two drams, water of peppermint two fluid ounces, syrup of lemon two fluid ounces. Directions, two teaspoonfuls every one or two hours till sleep is secured. But further along it seemed her intervals of sleep were too brief after these doses. It was then that I resorted to morphia in addition to the chloral. Beginning with one-twelfth grain, the dose increased to one-eighth, then to one-quarter grain. With these her rest would extend to six, even to eight hours' duration of a night. Having a strong heart, death came by slow degrees. The end was calm. The faithful, devoted, but nearly crushed husband watched at the bedside and waited on the wife to her last breath. He had never given any cause for his wife's drift to jealousy. The lady had always been considered a smart thinker, sharp on all general points. Prone to criticise those who erred in sexual morality. In her own nature she lacked warmth of sexual inclination and welcome, was prudent and pure in uprightness. I could not account for the unfortunate trend of her mania except by the supposition that she had stored up much secret thought of distrust which broke bounds with the weakening of her brain and mind in advanced years. Continuing faithful to her years of friendship, and loyal to the good repute of her home and family, through it all I squarely resisted every suggestion that an asylum was the proper place for her care. At home, nothing specially discreditable could be exploited to public ears; and her care and comforts could not be excelled by any institution.

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Necrotic Anginas are described by P. Lereboullet (Prog. Med., Feb. 8, '08), who details five cases. There is an exudation resembling diphtheritic membrane over the tonsils, the examination of which shows no diphtheria bacilli, but only streptococci, which seem by an especial virulence to be the cause of the exudation. The fever is high; the glands may be enlarged; the general condition is bad. After some days the membrane clears up and leaves a necrotic area on one or both tonsils, which may extend to the pillars of the fauces, soft palate and roof of the mouth. The palate may be ulcerated and perforated. The larynx is never involved; but the nasal fossae may participate in the exudation and a coryza appear. Their is no difficulty in swallowing and phonation. The tissues show little inflammatory reaction; repair, when it occurs, is rapid.

THE NATURE OF INFECTION.

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AN infectious disease is one which has for its specific or essential cause a living micro-organism, which by one means or another or in one way or another has been introduced into the tissues of the body. The human organism constantly harbors either upon the skin or the mucous membranes or within the various tissues, organs and cavities a great variety of bacteria; some of which are really beneficial; some quite harmless, at any rate; and some harmful in their effects, ranging from the occasioning of slight symptoms to death-dealing malignancy. The laity are sadly lacking in a sense of proportion concerning the variability in harmfulness of these bacteria, considering them all alike virulent in the last degree. The public is not yet educated to appreciate that only a very small proportion of micro-organisms are disease engendering; that of this proportion in turn a very few indeed are productive of serious disease. So that they have as great a horror of the leper as they would have of the plague case, of the comparatively harmless consumptive as they would of the smallpox victim. The laity do not understand, moreover, that the via of infection differ radically with the germ in question, the invasion being in one instance by the air, in another by the mouth, in another through drinking water, and the like. There is much the laity may learn from us in our consultations; much which would obviate a great deal of needless terror and a great deal of cowardice and senseless brutality toward the sick of infectious disease. The laity should learn from us whether given infectious diseases are to be feared, in which degree and in what manner.

Disease engendering parasites are either animal, as insects, worms and protozoa, or of vegetable origin, as most bacteria. With regard to animal parasites Ricketts makes a distinction between infestation and infection. When living organisms exist on a body surface, as the skin or intestinal tract, the surface is said to be infested. The skin is infested with pediculi. The intestinal tract is infested with tape worms; "but when the larvae penetrate the intestinal wall and reach the circulation or distant organs we must speak of infection." The adult tenia, moreover, as it exists in the intestines, may cause erosions of the mucous membranes or may perhaps burrow a slight distance into the wall, when this would at least approximate an infection. The distinction is in most cases easy; but obviously it must sometimes be an arbitrary one.

Another distinction we might make here is between infection and contagion. For my part I have never quite grasped it. I don't see much need for the term contagion, and have almost no occasion for it. I have come upon some pretty deep floundering in the literature over these terms. Infection comes from the Latin *infecere*; to place in or into. Non-infectious diseases are never contagious; the term infection includes the term contagion. Ricketts defines a contagious disease as one which may be transmitted from one individual to another by direct or indirect contact; "the word has reference to the manner of transmission"—to the manner of the in-

fection, I understand. Contagiousness is well illustrated in those diseases in which the transmission takes place through the air, as seems to be the case in smallpox and scarlet fever. Here, states Ricketts,* in his important work, there may be a contagious zone of atmosphere surrounding the patient, in which the virus is present, and by which the agent reaches the lungs of one within the zone. Contagiousness is even more striking when it takes place through the medium of such inanimate substances (fomites) as clothing or toys, which were previously within the contagious zone or in direct contact with the patient. Typhoid is not highly contagious. There is probably no infected atmospheric zone about the patient in the sense that there is about a scarlet fever patient; yet the nurse frequently contracts the disease while caring for such a patient. This is probably because in some way the bacteria has been transferred from the patient's urine, sputum, feces or skin to her lips or hands, so that eventually they have found their way into the intestines.

The injurious effects of bacteria may result from their direct influence upon the host's tissues, as by the removal of blood or other nutritive disturbances; or by formation by these bacteria of such substances as toxins, ptomaines and the like, which give rise to poisoning or intoxication. The bacilli or their products may exert only a local effect, as shown by supuration and necrosis, or a general effect as evidenced by fever, nutritive disturbances, prostration, coma, delirium, etc.

Bacteria are the lowest form of organism, requiring usually the one-twelfth inch oil immersion lens for their detection. One reason why we have not thus far discovered the germs of such manifest infections as scarlet fever, smallpox and the like may be that we have not yet perfected microscopes sufficiently powerful to detect such infinitesimal entities. The tubercle bacillus, for example, is about 1-10,000 inch in length and its breadth is about one-fifth its length.

Bacteria multiply by fissures or division. Under certain circumstances they form spores by which the given species is perpetuated. Spores are much more resistant than the mature forms from which they spring, to heat and other destructive agencies.

The familiar classification, according to microscopic appearances, is into cocci, bacilli and spirilla.

The staphylococci (the word means a cluster of grapes) appear bunched; they are responsible for local suppurative processes, such as furuncle, abscess, phlegmon; they are found in bloody urine and in the sweat in conjunction with infective processes. The streptococci, which form a chain-like arrangement, are found especially in inflammations of a progressive and malignant character, such as erysipelas and puerperal sepsis. Diplococci are seen in pairs or in packets of four, eight, sixteen and thirty-two.

The bacilli are an immensely important class. Having the general form of a rod (bacillus, a rod) with features distinctive to each, they are essentially and primarily responsible for anthrax, tuberculosis, leprosy, typhoid fever, tetanus, diphtheria, influenza, cholera and many another disease.

Spirilla are found in relapsing fever; and there seems no doubt that an organism of this form is re-

sponsible for syphilis.

In a number of infections the causative agencies have not yet been discovered; such are measles, scarlet fever, smallpox, varicella and vaccinia. It is a natural and surely a correct inference that microorganisms in one form or another are responsible for these diseases, for the reason that the course taken by them is quite characteristic of these infections in which bacteria have been demonstrated.

Mixed or concurrent infections are extremely important of consideration. For example, pure tuberculosis, in which only the tubercle bacillus is present is a disease comparatively innocuous condition; who among us has not harbored tubercle bacillus from time to time. No one. But when streptococci, pneumococci and other organisms complicate the original tubercle formation—then the symptoms characteristic of consumption appear and the prognosis becomes serious; though (as has been demonstrated in thousands of cases) not necessarily fatal.

An organism which is already attacked by infection becomes all the more susceptible by reason of the resulting weakness and lack of resisting power, to the action of other pathogenic bacteria, should the latter find an atrium. The already diseased tissues afford especially congenial foci for germs, against which the body in health would oppose efficient barriers. In point of fact the associated action of two or more kinds of bacteria in the body at the same time is of very frequent occurrence. Many so-called complications of a given disease are due to secondary infection with a new germ. Tuberculosis, as I have observed, is rarely a straight unmixed infection; if it were tuberculin therapy against this disease would be much more curative than it is, though it is often so notwithstanding. When the tubercle formation about the primary bacillus becomes the seat of mixed infection, bacillus extracts are powerless against the latter.

Generally speaking mixed infection increases the gravity of the original infection. On the other hand it would seem that sometimes the concurrent action of a second germ (streptococcus, for example, with the anthrax bacillus) may render a virulent organism comparatively harmless. Erysipelas, again, was at one time implanted upon cancerous growths in the hope of destroying the latter—a hope by no means realized.

As a general proposition sufferers from chronic affections are prone to infectious complications, no doubt because of the vitiated condition of the tissues, which render them susceptible. This is not always so, however. Heart lesions which tend to congestion of the lung seem to protect against pulmonary tuberculosis. Besides, those who have contracted the infections incident to childhood and youth will generally resist a reinfection in later years.

There is the widest range in the communicability of infectious diseases; and this is a thing our patients little understand or appreciate. The powers of resistance of the individual come into play, and must never be lost sight of. The germs of the exanthemata are generally given off from the body under such conditions as render possible and frequent their direct transmission through the air. Syphilis, tetanus and rabies, on the other hand, are rarely contracted without contact, either direct or indirect

*Infection, Immunity and Serum Therapy.

Syphilis of the innocent is often contracted indirectly, as by the medium of drinking cups. Between the extremes of atmospheric transmission and direct contact there is wide diversity in the liability to be affected by germs. The likelihood of a healthy individual's contracting an infection while in the presence of a sufferer depends largely upon the intelligence exercised in the disposition of the clothing and other material containing the germ which is in one way or another set free by the infected body. Thus we would consider tuberculosis, or diphtheria or pneumonia readily communicable when the patient is living in a crowded tenement with ignorant or careless attendants; while in cases subjected to the intelligent ministry of modern sanitary science such diseases are relatively slightly communicable.

There are the familiar four stages in the course of an infectious disease—incubation, invasion, the stationary period and the decline. I shall here consider only the first two. Incubation corresponds to the time elapsing between the deposition of the morbid germ in the tissues and the first manifestation of the disease. During this period the organism is by opposition power, and the other natural powers of resistance it endeavors to destroy the bacterium and its toxins. If this is done successfully the disease is not manifested. Thus, in epidemics, very many do not succumb. When manifestations do appear there has been a latent period of development preceding the invasion—appearance of the symptoms. Incubation may be completely without any indication of disease; then there is reaction, often quite suddenly, as in pneumonia. In other instances the onset of the disease is manifested in a slow and insidious manner, as in typhoid. Here the transition from the normal to a morbid state is so insensible that one cannot say precisely when the illness began.

An average duration of latency, varying only within narrow limits, exists for the majority of infectious diseases. However, the incubation period is at times shortened and at other times prolonged within considerable limits. This is well represented in the history of venereal diseases; for it is in these cases that the moment of contamination may be fairly well determined. With syphilis, for example, it is generally from twenty to thirty days after coitus that the chancre appears; yet infection has been known to occur within ten days, or to have been delayed until the fortieth or even the fiftieth day. A like variation occurs in gonorrhoea; here the average is from two to five days, whilst the discharge sometimes begins in twenty-four hours or appears very tardily at the end of several weeks. Information is quite precise in infection where traumata have played a part. In tetanus the incubation period is from two to three days. Ye invasion has come in two hours; and has on the other hand been delayed thirty-five days. In rabies the incubation varies between fourteen and thirty days.

In cases of prolonged incubation several contingencies are possible. The organism may have destroyed the bacteria as I have noted; and a prolonged incubation may have been due to a second exposure. This, though possible, is however unlikely, because a first exposure would tend to result as does vaccination for smallpox. Or the germ may have remained dormant and inoffensive in the tissues, until the

influence of any acute excitation (as a traumatism) may have aroused it to pathogenic activity. Again the incubation period may be shortened, as in surgical or puerperal sepsis, probably because the traumatism has lessened the organism's resistance.

Cholera is said to have developed a few hours after contact; and typhus to have occurred even immediately upon the attack. In such cases the individuals approach the patient, feel a pain which alarms them, have to lie down and seem immediately stricken. So states Roger in his important *Introduction to the Study of Medicine*. Evidently in such cases fear, a most potent exciting cause of disease, has been banefully effective. Physicians and nurses are not afraid; that is one reason why so few of them succumb in epidemics.

There is a variability in the action of viruses. These are either fixed or variable. In rabies, for example, the variable virus is that found in an animal which has accidentally become rabid; the fixed virus is that which has acquired a definitely determined power by virtue of successive passages through animals. By inoculations into animals of the same species under the same conditions the phenomena are made to appear after the lapse of a perfectly determined period of time. In native, however, this is not the case, and the constant variations in virulence lead to modifications in the incubative period. It is the same with the human being. The vaccine of smallpox has become a fixed virus, because of its transmission by successive inoculations; its period of incubation is practically invariable. Those vaccinated the first time exhibit the eruption in twenty-two hours; and it is well developed in the course of the fourth day. With viruses of variable potency the incubation period will be shorter the greater the energy and the number of bacteria introduced. The incubation period will vary also with the location of any traumatism. In tetanus and rabies it is earlier when the wound is on the face. It is longer if the affected region is well provided with dense cellular tissue and poorly supplied with lymph and blood vessels—the general carriers of infection. Again bacteria develops more readily when they are introduced simultaneously with agents favoring their multiplication, such as irritating substances, or other bacteria. Then, of course, there is the virility or the weakness of the system of the host to be considered. The emotions, such as fear, moral impressions and the condition of the nervous system must all be considered. I have taken the following table mainly from Roger. The incubation periods of tuberculosis, meningitis and leprosy are not set down. The two former may remain latent for years; the incubation of meningitis is not known, the shortest recorded time being one hour.

Disease.	Average.	Minimum.	Maximum.
Anthrax	2 days	1 day	3 days
Chancreoid	2 days	1 day	3 days
Cholera	3 days	1 day	6 days
Diphtheria	2 days	2 days	15 days
Dysentery	3 days	1 day	5 days
Erysipelas	5 days	7 hours	22 days
Glanders	4 days	1 day	3 months
Gonorrhoea	3 days	2 days	7 weeks
Influenza	3 days	1 day	5 days
Mumps	15 days	7 days	30 days
Malaria	8 days	4 days	Several months
Measles	10 days	4 days	14 days
Plague	2 days	10 hours	12 days

Pneumonia	Abruptly	Abruptly	2 days
Rabies	20 days	13 days	18 months
Relapsing fever	6 days	5 days	7 days
Rubeola	18 days	5 days	21 days
Scarlatina	4 days	7 hours	7 weeks
Smallpox	12 days	7 days	15 days
Syphilis	3 weeks	10 days	50 days
Tetanus	2 days	2 hours	35 days
Typhoid fever	14 days	2 days	21 days
Typhus	12 days	??	33 days
Vaccinia	3 days		
Varicella	14 days	13 days	19 days
Whooping cough	8 days	2 days	8 days
Yellow fever	3 days	12 hours	7 days

The invasion indicates the appreciable beginning of reaction on the part of the organism. It may be sudden, as in pneumonia, or slow and progressive, as in typhoid fever. In the latter instance there may have been in the incubation period an indefinable malaise or slight symptoms, such as would be inadequate to determine the nature of the morbid process. A progressive invasion is easily comprehensible. The noxious substances (toxins, ptomaines) are secreted in most cases little by little and become diffused throughout the organism; and as the diffusion and increase of toxins becomes pronounced the manifestations of disease are correspondingly conspicuous. Whatever the mode of invasion the initial phenomena generally indicate disturbance of the nervous system. If invasion is slow and progressive the disturbances are accentuated little by little. Malaise, headache, dizziness, weakness of the extremities, incapacity for muscular or mental exertion begin the illness. Delirium, if present, is mild and unobtrusive. Sleep is disturbed only by nightmares or vagaries. On the whole the symptoms are not intense, but supervene gradually, and they become aggravated in a slow and often regular manner. If on the other hand the invasion is sudden, the state of the nervous system will be disquieting from the very first. In such cases there has been a latent accumulation either of bacteria or of toxins. A sudden reaction occurs, characterized by chills, or in children by convulsions. At the same time fever develops and rapidly reaches a high degree—104 F. Headache is intense; and delirium may be excessive from the beginning. Severe delirium is nearly always observed in diseases of sudden onset. Delirium tremens is exceptional in typhoid fever; it is not so rare in smallpox and erysipelas; it is quite frequent in pneumonia. It expresses a profound nervous perturbation, and occurs in the alcoholic as a result of toxic shock, akin to such as is produced by a violent traumatism. Moreover, in sudden invasion there are symptoms, a series of them, referred usually to the viscera, but which are nevertheless disturbances of innervation. Vomiting, without any apparent organic lesion of the stomach; scanty or suppressed urine, without the stricture of the kidneys being apparently affected; intense dyspnoea, though the lungs show no lesion; quickened and irregular pulse in no wise dependent upon cardiac lesions. The tongue is usually furred from the beginning; if it is not so while these other symptoms exist, there may be a very grave disease, such as meningitis, to deal with.

Such are general symptoms indicating invasion. Local manifestations may appear from the beginning; at times they precede the general reactions; sometimes they accompany them; sometimes they

run their course without giving rise to any general phenomena. The manner in which bacteria bring about the phenomena we have here considered is both interesting and important; they act either mechanically or the infection is bacterial, or it is due to the toxins evolved by the bacteria. It is doubtful, observes, Ricketts, if any pathogenic bacterium is entirely devoid of toxic powers. Probably the bacterial emboli which are sometimes found in capillaries and small arteries cause disturbances by shutting off so much circulation; but still greater damage is apt to result from the action of the toxins which are evolved by the germs making up the emboli. There is typical mechanical disturbance in lobar pneumonia. A fibrinous and purulent exudate fills up the alveoli, thus making a large area of pulmonary tissue unavailable for respiration. Yet even here the mechanical disturbance has been due to the previous toxic action of the pneumococci on the capillary walls and the alveolar epithelium, permitting the escape of the blood and serum.

FLOTSAM AND JETSAM.

Psychology—Consumption—Old Age—Quacks and Nostrums—Venereal Diseases—Christian Science and Kindred Methods.

BY W. T. MARRS, M.D., PEORIA, ILLINOIS.

PSYCHOLOGY is constantly entering more and more into the practice of medicine as indeed it is all the other affairs of life. We live in an age when quick action is imperative, or rather we believe such to be a *sine qua non*, and we all strive to get the mental index of the other fellow right off the bat in order that we may the better cope with him along whatever relationship or line of business he may chance to interest us. The commercial world attaches much significance to the psychic element in man and we hear on all sides something said of the "psychological moment" and of that intangible something known as the "personal equation." There is now an attempt made to explain on a psychologic basis everything both in and out of medicine that does not seem to possess a tangible entity. It can not be gainsaid that the study of psychology as applied to medicine has been attended by beneficial results and in many instances has lifted vexed problems from the realm of speculation to some semblance of a known cause. This subject might be considered from a great many viewpoints, but it is the intention in this instance to merely take a cursory glance at it in a general way.

In the first place let us notice suggestion in its broad sense as a factor of causation as well as alleviation in disease, especially of that rather wide class known as functional and neurotic. This subject has been pretty well threshed over the last few years, yet it presents phases of vital and ever-present interest. The mind should by no means be considered all there is to man, although it can not be questioned that the mind is the dominant factor, directly and indirectly, in securing both his health and happiness. We too often forget that man is a soulful and sentient being and are disposed to regard him and his ailments from a materialistic standpoint. A sick man or woman and a sick watch have only a few points of similarity in common. The trend of a con-

siderable portion of medical teaching the last decade has been to foster the belief that man's body is a tenement house for myriads of pathogenic bacteria, or that he is encumbered with too many organs that only get him into trouble, and which therefore should be extirpated or at least whittled down. The condition back of the pathologic process, or the condition that made the latter possible, is too often scarcely given a thought in passing. If anything of an ulterior character should be assigned in the etiology of a given case it is not uncommon for trouble and worry to be named. It is true that trouble and worry are protean and far-reaching in their consequences, yet on account of their commonness they do not always merit the significance attached to them. There are people so constituted that trouble for them has a salutary effect just as "one man's meat is another's poison"—sometimes. What is trouble and mental perturbation for one person may be an inconsequential matter to another. Certain kinds of trouble, alleged or real, may be useful to some in that it gives mental occupation and in some measure sings the ego. With most people, however, such a benign effect does not obtain. Nervous and energetic people usually bear trials and tribulations comparatively better than the staid and lymphatic. It is a very difficult matter to weight with any degree of accuracy the adverse mental influences that operate to the detriment of an individual. Many who are overwhelmed by grief, despondency and innate pessimism are reluctant to let their true feelings be known. Others who have the severest crosses and are living under a cloudy mental atmosphere may not suffer appreciably because of the fact that they ventilate their feelings freely enough.

The psychic influences operate in many ways to be at least a contributing factor of causation in disease. The fear of sickness is well known to be potent in the production of the very disease we may hope to evade. A good many years ago when the writer attended medical college an epidemic of cerebro-spinal meningitis broke loose among our students and in a very short time a number of lusty young men succumbed to this awful disease. Those of us who were so fortunate as not to acquire the disease suffered nearly as much as those who took it, for we were nearly scared to death and each imagined his turn would come next. We kept our diagnostic acumen in relation to this disease whetted up quite well and would frequently imagine we had the initiatory symptoms, headache, occipital pains, etc. When we listened to the lectures on diseases of the chest we imagined our hearts to be wabbly and frequently diagnosed our own cases, afterwards going to the professor to have him confirm our opinions of the lesions—which he never did. We often subjected our urine to a searching analysis lest nephritis, diabetes or some other grave kidney affection slip up on us unawares like a will o' the wisp or a thief in the night. The reading of medical books has a morbid effect upon many young men in their early student days and the reading of highly-colored quack literature cannot fail to have a baneful influence upon the minds of many lay readers. The preposterous lies of quacks and charlatans have made life wretched for many and perhaps have been the cause of send-

ing not a few distressed mortals to premature graves. A fact that the dishonorable element of the medical profession lays great stress upon is that if the idea of disease is firmly implanted in the mind of a person it is hard to eradicate and laugh down; hence he becomes an easy prey in response to the seductive influences they throw about him.

But while the psychic influences adversely turned may produce disease and suffering we may put such to good use in properly applied psychotherapy and suggestion. When we utilize these forces for the betterment of the individual we are practicing medicine in its broadest sense. A physician's duty is not ended when he has left some pills and opened the windows. The afflicted are very observant and every word, look and gesture of the doctor means something to the patient. How often the latter is only regarded as a "pretty case" with pathological possibilities. This phase of the subject might be pursued indefinitely, but before dismissing it I wish to relate an incident wherein I once performed a remarkable cure without knowing it. Several years ago before there was scarcely any literature extant on this matter I was called to see a man who was having a little malaria. He remarked that tobacco was the only thing that tasted natural to him and in a spirit of jocosity I said that after he was through with the dope I was giving him he would not be able even to taste the noxious weed. I thought no more of it until some weeks later when a man entered my office and wanted some of my specific for the cure of the tobacco habit, remarking that I had permanently cured Mr. So-and-So, naming the gentleman first mentioned. This was a great object lesson to me and from that date to this I have never lost sight of the importance of calling into use the great agency of the mind when attempting to mitigate disease.

The attention to psychiatry in recent years has thrown much light upon the class of mental opacities known as psychoses and neuroses. The line of demarcation between normal and abnormal cerebration can never be quite plain, but we have better conceptions of these things now than formerly. The various phobias would furnish us material for an exhaustive paper. Obsessions another, in which we study such foolishness as the desire to jump off a high building, munch our mustache, nibble our finger-nails, count our steps, run from germs and do hundreds of other absurd and freakish things. In a grosser and more practical way the study of psychology is attended by value because it renders the observation more acute. Men, by the way, are not as close and careful observers of the little things that daily concern us as are the opposite sex. It is said that a shrewd woman with ordinary observing acumen can size up at one glance a crowd of other women and be able to tell how each is dressed from hat to shoes and form a tolerably accurate estimate of the cost and texture of every garment each woman wears. The average man would perhaps see no marks of distinction about any of them except that they wore hats and dresses.

There is no medical topic so popular and no matter of a medical character so thoroughly exploited as that of consumption. Barrels of ink are being used for this purpose and the laity as well as the profes-

sion ought to be tolerably well informed regarding this arch-enemy of the race. It is said that the dissemination of information on the subject is reducing the death rate from tuberculosis in our large cities, but it is still altogether too prevalent. It is indeed appalling to think of the ravages of this disease. It is estimated that 10,000,000 people now living will succumb to it unless through some almost Providential intervention its onslaught is checked.

What is the cause of consumption? I use the term "consumption" loosely and expansively to cover all the symptoms that might be manifest in this connection. We can't get away from those old twin conspirators, heredity and environment. Their backs are broad and, like charity, they cover a multitude of mischief. As much as the lement of heredity is these days considered by scientific men to be of secondary importance, yet careful etiological investigation in nearly every case that confronts us will show up something wrong with the ancestry. It may not be a tendency toward tubercular disease, but any condition that impairs nutrition and alters metabolism may sow seed that the progeny will harvest in this death-dealing disease. It may be syphilis, alcoholism, excessive maternity or over-indulgence sexually. Hereditary influences may skip a generation or two. Environment causes are as a rule more in evidence. Direct infection may be put down in a very considerable number of cases. The reasons are obvious. People persist in living jammed up in big cities where the atmosphere is polluted by countless varieties of poison both free and in a gaseous state. The great bulk of cases emanate from the unsanitary and unhygienic conditions which city life imposes, although the rural regions are not without a tolerably full quota. I can not help but think that one's inherited and inherent vitality, or the lack of it, is the greatest determining factor in tuberculous diseases. We have abundant opportunity to come in close contact at frequent intervals with his Satanic Majesty, the tubercle bacillus, yet he does not become attached to all of us because of the fact that our tissues successfully antagonize his advances. The life insurance people do not regard with much significance such causes as "catching cold," "hard work," "exposure," etc. They can at best be considered only as contributing factors. On the whole consumption is a disease that attacks the esthetic and intelligent. Those most likely to be numbered among its victims are those naturally refined, with pleasant and amiable dispositions, who enjoy the better things of life and who are fair to look upon. It seems almost like one of the paradoxes of Nature that some of her best handiwork should be thus early and tragically stricken.

Any treatment to be effective must be instituted early and persistently carried out. Clinically the disease must be recognized in its incipency, for treatment is too often of no avail after there is marked bacillary invasion. The early ear-marks of the disease in what may, with some usurpation of license, be termed the pre-tubercular state are too common for hepetication here. One symptom that deserves more attention than it usually receives is an early morning temperature of less than 98 degrees. This is a warning note that should be properly considered even though other macroscopic as well as mi-

croscopic signs may be absent. What shall we advise the person who may give signs of possibly becoming a victim of the great White Plague? Fresh air is the hobby now. It is preached and practiced so energetically as to prompt one to designate it as a hot air procedure. Pure air is of course a ne plus ultra for consumption, but it is difficult to understand that it is any better for this disease now than it was fifty or a hundred years ago. Every state in the Union has at some time been exploited as having the ideal climate for consumptives. Here in the middle west our consumptives go to Colorado or the torrid southwest. The native "lungers" in those places go elsewhere. Some distant place always holds up a beckoning hand to the invalid, but after he arrives at his Promised Land he finds that he has many difficulties to meet and contend with. They are too numerous to mention in this article. One thing in particular that he too often finds—and pity 'tis, 'tis true—is that he is a participant in a hold-up game in which he assumes the role of It. A bunch of people have plotted together to get him there to relieve him of his surplus cash. There are many climates that are better than others, but it is certainly the height of folly in more ways than one to go off in search of health to one of these much-advertised Meccas. After all, air is air and oxygen is oxygen (just as "pigs is pigs") and when home comforts in all that the word implies are sacrificed for the sake of climate the wisdom of it is very problematical.

Another topic that occupies a good deal of space in the journals these days is that of standing off the ravages of old age, or the proper and graceful way to grow old. A good deal of gray matter has ever been at work trying to unravel the many mysteries of life, not the least important being those means and measures which are conducive to healthy and happy old age. Many persons say they do not care to live to an extreme age knowing that they will suffer some of the infirmities that mark the passing of the years. No one there is who does not hope to escape the condition of the senile and doddering old man with his blue nose, his trembling limbs and his dribbling urine. The Maker of man surely did not intend that he should lapse into such an unenviable state before he passes from the "earth, earthy." Old age is in the main an ossifying process, a swapping of animal matter in certain tissues for that of the mineral kingdom, together with certain other structural changes and infiltrations. Arteriosclerosis is usually recognized as the principal pathological process that becomes manifest as time begins to get in his relentless work, but the condition upon which the blood vessels become limy and inelastic concerns assimilation and that other rather vague one which we term metabolism. It is a fact well known that if we can keep the vascular system pliant and functioning normally the mutual relationship between waste and repair is evenly maintained, other things being equal, and the individual does not show evidence, of the tramp of years. Clinically speaking the matter of diet and nutrition more vitally concern longevity and healthy old age than any other one thing. No ideal dietetic plan can be formulated, for in this particular every person is in a great measure a law unto himself. Sour milk by reason of its ferment, lactic acid, is perhaps the best food for stand-

ing off the somewhat complex process known as growing old and may be used to advantage by all who travel the western slope of time. Buttermilk as the main article of diet, coupled with the proper hygiene and way of living in general, may enable many to reach the century milestone. But while life has a roseate hue to most of us, especially when we think about giving it up, the majority of people do not take kindly to the idea of a buttermilk bill of fare, saying that between swilling down sour milk for a hundred years and being dead they would prefer the latter as the lesser evil.

However, the sour milk diet has been conducive to extreme old age in countries where it has been thoroughly tested, if we are to rely upon reports from those making the observations and collecting the data. Race, climate, habits, etc., must also be remembered as being great determining factors in longevity. Notwithstanding our very strenuous life the average length of life in this country is moving up a little all the time. Note the personnel of our United States senate and the number of octogenarians within its ranks. It really seems that the old fellows are coming to their own. I attribute something in the matter of our lengthening days to the fact that we have about given up the idea of turning our faces to the wall and dying at the allotted three-score-and-ten. We ought to live four or five times as long as is required for us to mature and develop. Perhaps in a hundred years from now centenarians will be more numerous than English sparrows in a back street.

The American Medical Association is striving diligently to purge the profession of quacks and quack nostrums. This would be a laudable undertaking if there were reasonable hopes to believe that their efforts in this direction would be attended by any considerable measure of success. But in their crusade against nostrums the association has sought to place the ban upon certain proprietary remedies while others in the same class and to all intents and purposes the same are sanctioned by the association's Council of Pharmacology. The fact that some of the members of said Council are themselves manufacturers may or may not prompt other members to look with favor and act with courtesy upon matters arising within their ranks. We have a great many proprietary and eth-pharmal products on the market whose elaboration involves laboratory skill and whose therapeutic worth is above speculation, while some others have little to commend them, being little better than simple mixtures that the merest tyro might throw together and duplicate. But to sort out and classify the good, bad and indifferent ones with fairness and impartiality requires far-reaching research and discerning judgment. It is a hard matter to settle amicably and in this particular rivals the old and vexed problem of capital and labor or tariff and protection. If the A. M. A. and the profession in general desire to act as sponsors to the people and their acts are the promptings of an altruistic spirit, I believe more good could be accomplished by a campaign of education along moral and social lines. Quacks and the dopes of quackery will die a natural death when the people become more thoroughly informed on the great laws of life and living. The support that the medical profession has recently given

the prohibition movement has perhaps done more to stamp out useless and promiscuous medicine-taking than any other one thing.

But there are other matters on which the laity need be better informed and which the profession should feel free to tackle boldly. Venereal diseases are the curse of our country. Had the profession done its whole duty all along the line the ravages of syphilis and gonorrhea would have long since been considerably in abeyance and thousands of innocent lives saved and untold suffering prevented. The laity, even the boys and girls of understanding age, should be taught the horrors resulting from gonorrheal infection and that he who pays tribute to the shrine of Venus at unseemly times and places may not only cause suffering for himself but perhaps for others as well and at a remote period of time. It may be a case of sowing to the wind and reaping the cyclone. It is certainly a deplorable thing that this nasty and tragic disease ever came to be regarded by the laity as an inconsequential affair and a topic for jest and flippant conversation. Gonorrhea is uncertain as to cure. The symptoms may be in abeyance for months or even years, yet the redoubtable gonococcus may be lurking somewhere along the genito-urinary route only awaiting the right sort of stimulus to quicken it into renewed activity. This too often is the nuptial couch and an innocent and confiding girl as the first step in a hopeful marital career is infected with a loathsome and perhaps death-dealing disease. It is a matter over which angels may well become lachrymose and even self-respecting devils try to hide their diabolical grins. In acute attack in a woman may go almost unnoticed and therefore untreated and no suffering be experienced for months and possibly years. But under the conditions which pregnancy and parturition impose the gonococci that may have been lying in a latent and innocuous state somewhere in the woman's pelvis may bring on an inflammation that places her life in jeopardy. If she survives, the pus may be walled off somewhere, perhaps in the ovaries or tubes, or other regions of the pelvis and an operation and thorough drainage offer the only hope of her life. If gonorrheal infection in women were prevented the gynecological surgeon would not be nearly so much in evidence as he is at the present time. The uterus, adnexa and other pelvic tissues would seldom be the seat of purulent inflammation if women never became infected with gonorrhea and always lived a hygienic life sexually. Another thought in this connection that is indeed appalling to contemplate is the destruction of eyes due to ophthalmia neonatorum and the number of people going through a life of beauty wearing sightless orbs. One-half or over of cases of congenital blindness are due to infection produced as the exit is made through the birth canal. It behooves obstetricians to give diligent attention to the eyes of newborn babes in all cases where the least suspicion is felt. The "eminent respectability" of a family should not deter one from doing his duty in this particular, for the gonococcus is not always a respecter of persons and may visit those in high estate as well as those amidst a lowly environment. A copious vaginal secretion should always arouse suspicion. It is better to err on the side of extreme scrutiny and dili-

gence than to let a case of ophthalmia go unrecognized with perhaps disastrous consequences to the little one. Many of us are prone to sins of omission in this matter. Let me emphasize this thought with a little personal experience. Some months ago while attending upon a woman in her second confinement I noticed quite a leucorrheal discharge, but as the family was one of the above-mentioned type of respectability I attributed the condition as a natural concomitant of gestation. No special attention was given to the eyes of the babe in this case. In about three days the family reported to me that the baby's eyes were sore but that at the suggestion of a woman whose baby's eyes had once been similarly (?) affected they were instilling breast-milk into the eyes and hoped for a speedy cure. I went to investigate, and upon prying open the lids out popped the thick, creamy exudate so characteristic of that dreadful ophthalmia. Persistent treatment—silver nitrate and boric acid—saved one eye, but the ravage of the infection was so rapid and insidious that one eye was lost. Perhaps had the treatment been instituted one day earlier both eyes might have been saved, although I thanked fortune that one remained. Prevention would have been better still, as indeed it always is in all things medical. A case like the one just mentioned also involves delicate points touching social and marital life and the duty of the physician toward his clientele. A doctor should encourage domestic felicity and not divulge confidences reposed in him, so long as he can do so without compromising his professional worth and dignity. And whenever I think of professional dignity it is always the quiet and unassuming sort. In this case I was pressed by both father and mother to know the cause of the trouble. Calling the husband aside I told him there was only one thing that could produce an ocular infection of that kind. He then confessed that his wife had had a paramour some months previously, and further explanations would simply have been another case of carrying coals to Newcastle. The attitude that I took in the matter seemed to have a salutary effect on all concerned. The woman resorted to the weapon of her sex—lachrymation—was very sorrowful and penitent, and promised to go her way and sin no more. Let us hope she never will. It was an awful lesson. At any rate the husband promised to forgive and forget and the external evidences are that each is making good.

One of the chief objections to Christian Science and kindred methods of alleviating ills is that the lay mind can not diagnose disease or arrive at a true conception of it when diagnosed by the ablest physician. A physician was called 150 miles the other day to see a woman past fifty years of age who was a sufferer from chronic hysteria. In the present instance she had been down for six months and suffered from almost every disease symptom in the catalogue. She had run the gamut of spinal disease, paralysis, indigestion, cancer, appendicitis, etc., from which she suffered the most excruciating pains. She was obsessed on every diseased condition she could hear of. The neighbors and friends were anxiously inquiring how many more days the lady could live. When the physician made this long-distance call the patient was about to die of cystitis and worked herself into frequent frenzies on this account. Stated

that great pieces of fleshy material were passing from her bladder, which the friends verily believed but did not see. Urination with her produced a seance that aroused all the people in the block. Examination of the urine by the physician revealed a negative condition. The woman was told positively by the distant doctor that she was not sick with any organic ailment and that he would not prescribe any medicine for her because she did not need it. In a few days the lady was eating at the table with the family, much to the surprise of the neighbors. She was simply gormandizing herself with the bountiful sympathy of her friends. In fact there was no limit to the misapplied sympathy in this case, for the lay mind listens to the weird description of subjective symptoms instead of being guided by what the skilled physician may have to say about the case. The same doctor at the same time had a patient who suffered in earnest from about the same symptoms that the hysterical woman complained of, but in this case there was tangible cause for all the woman suffered from. She had undergone an operation a year or so before and it had left her with a fistula by which the feces were quire often passed through the vagina and she suffered more or less constantly with a cystitis. She was, however, a patient and uncomplaining little body and, distressing as her condition really was, did not gain half the sympathy or attention as the woman first named. Sympathy is too often distributed to those making the biggest clamor for it, just as the biggest buttinsky gets the choicest remnants at a bargain sale. No, the management of the sick should at least be supervised by physicians who alone are capable of weighing symptoms and catering accordingly. What can we expect the average lay individual to know about a neurosis? You can explain until you are black in the face, but your words only cloud his understanding the more. Physicians make plenty of mistakes, but on the whole they are much more capable of managing things within their realm than those on the outside. The layman who attempts to break in and hand out medical advice usually makes a mess of it. Even the great Edison is accredited by the newspapers as having recently made a semi-medical pronouncement to the effect that sleep is not altogether necessary and a waste of valuable time; that four hours of "tired nature's sweet restorer" ought to be enough for anybody. In other words sleep is somewhat of a habit. The Wizard of Electricity—and he justly deserves this title—may get along very well with four hours of sleep, but time has proven and facts have substantiated the belief that most people require double that amount, or even a trifle more. The fact that Napoleon and a few men known to history were sparing sleepers is no adequate reason for the rest of us turning ourselves into night-owls. Eggs are deadly poison to a very few individuals, but the most of us can eat them with impunity and they do us good. Again I repeat that when it comes to matters of health both in public and private physicians should be depended upon as the true censors and servitors. Others are like estranged lovers; they can not "understand."

Quackery was mentioned in a preceding paragraph, and good men often wonder why it flourishes as it does when true worth and skill go begging. It

is a difficult problem and almost beyond our ken. Education will go farther than legislation in weeding it out. So long as people are wholly uninformed they will long for that which is brazen, mysterious and inexplicable. It is the people who create the demand for the quack and irregular and make their existence possible. Good physicians often turn to methods of charlatanry in order to satisfy this demand and, incidentally, to make a living. With many people it makes your placebo an unparalleled specific to state that you paid an old German professor a fabulous price for it or that you accidentally got next to it while consorting with an old Indian chief. The preposterous and ridiculous go simply because we have not been disposed to educate the lay world out of much of its ignorance and superstition regarding health and disease. Some years ago a man opened an office in a dingy, inaccessible street in Paris and began treating disease in a peculiar manner. He dressed in an eccentric manner and went to and from his attic office in a slinking, stealthy way. Patients flocked to him and was soon coining money. Rival physicians had him hauled into court and the judge asked what excuse he had for practicing medicine. In answer this doctor produced a diploma from a creditable medical college. It seemed that he was a man of skill and scholarly attainments, but he could not make a living from honest, legitimate practice. But as soon as he began to dress in an outlandish manner and had rented a hovel where his coming and going attracted attention he had patients galore. It all recalls the epigram of a famous showman. Even yet in our present state of enlightenment many like to be P. T. Barnumed.

Polycythemia, an abnormally large number of red blood corpuscles, may be absolute or merely relative, states Parkes Weber (Practitioner, April, '08). Relative polycythemia is due to concentration of the blood, such as may be caused by choleraic diarrhea or other excessive fluid discharges, as in copious perspiration; its occurrence is probably only temporary; some local relative polycythemia can be induced by obstruction to the venous flow in the given part, the delay in the blood flow allowing longer time for lymph to leave the vessels, thus giving rise to local blood concentration. The total number of red blood cells is increased in absolute or true polycythemia (rubra vera); and in most such cases the total volume of the blood is increased, as well as the number of the corpuscles. In certain cases of valvular defects a condition of absolute polycythemia exists without relative polycythemia; this is due to simultaneous relatively greater increase in the total volume of the blood. Cases of absolute polycythemia are not likely to be regarded as cases of mere blood concentration because of the absence of the recognized causes of diminution of the total quantity of blood such as diarrhea, or excessive sweating; the plethoric or congested appearance of the patient; the persistence of the polycythemia, the relative manifestation being generally temporary; the fact that in some cases the total quantity of the blood in the body can be estimated and proved to be in excess.

Weber divides cases of absolute polycythemia into

three classes: (a) Those due to imperfect oxygenation of the blood and tissues owing to circulatory disturbance in chronic cardiac and pulmonary affections; as also the polycythemia occasionally following carbon monoxide poisoning and other toxic conditions interfering with proper oxygenation of the blood. (b) Those associated with living in high altitudes and diminished oxygen-tension of the respired air. (c) Cases of splenomegalic (or, as Weber prefers to term them) myelopathic polycythemia. In all these classes, but especially in the last the increase in the number of erythrocytes may be very remarkable. In cases of congenital heart disease, with more or less chronic cyanosis, seven to eight million red cells to the cubic millimeter of blood are not unusual. In a woman aged 21, with congenital heart disease there were 8,320,000 and a hemoglobin of 150 per cent.; in another woman aged 22 who had cyanosis and clubbing of the fingers from birth the count was over 11,000,000. In normal individuals the polycythemia of high altitudes may reach eight million red cells per cubic centimeter. In the so-called splenomegalic type counts of ten million red cells have been common, with hemoglobin values of 160 to 180 per cent. If such samples are allowed to stand (coagulation being prevented by the addition of citrate or tartrate of potassium) the corpuscular sediment will be found to occupy nine-tenths of the whole column, the plasma forming only a thin layer on the surface; in normal human blood on the other hand, the corpuscular and plasma layers are about equal in volume. In absolute polycythemia the total volume of blood in the body is generally, if not always, above normal. By the carbon monoxide method (of Holdane and Smith) of estimating the total volume of blood in the body, we can recognize clinically the presence of true plethora. Imperfect oxygenation of the blood and tissues is probably the exciting cause of the polycythemia of chronic diseases of respiration and of the circulation. Deficiency of oxygen stimulates the functions of the red bone marrow so as to cause an increased formation of red cells. The polycythemia is thus a compensatory vital reaction. Autopsy in cases of chronic cyanosis of cardiac or pulmonary origin confirm this hypothesis; for in such cases, although the red color of the bone marrow of the shafts of the long bones is partly due to engorgement with blood, evidence of abnormal hematopoietic activity is likewise obtained. The polycythemia of the so-called splenomegalic variety (a numerical increase of the red cells, which, owing to cyanotic appearances at first be mistaken for that dependent on chronic cardiac or pulmonary diseases) is probably due to increased activity in the erythropoietic functions of the bone marrow; the excessive formation of red cells may perhaps be regarded as analogous to the excessive formation of leucocytes in leukemia. The viscosity of the blood is always raised when the number of erythrocytes is much increased; undoubtedly this viscosity is important with regard to vivisection in chronic diseases of the heart and lungs. In cases of cyanosis with polycythemia, increased blood viscosity and engorgement of the right heart, venesection must not only temporarily relieve the right heart but must also, by diluting the blood, reduce its viscosity, and thus enable it to circulate more freely through the capillaries of the lungs and other organs.

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ARE WE, AS A PEOPLE, UNDERGOING MENTAL DETERIORATION?

THE assertion has often been made that the present generation while undoubtedly better informed as to many details, has less mental acumen, less power of initiative, less mental industry, than has prevailed in the past. The occasional appearance of such opinions in medical journals and the very frequent condemnation of modern school methods on grounds of physical and mental hygiene, seems to warrant further consideration of the subject.

While the theoretically desirable statistic method of solving the problem is obviously impossible, it may be pointed out that the general dissemination of education has never been so great as at present. Practically all of our enlightened states require—and quite efficiently enforce—school attendance up to the age of 14. Thus, of the stream of humanity now passing the period of common school instruction, practically every individual not in some way disabled, physically or mentally, must actually have such an education. In several states one-tenth up to one-seventh or more of the stream passing the high school period actually gets a full high school training. In some cities, half the graduates from the grammar schools at least enter upon the high school course. Indeed, in some cities what was, a few years ago, considered to be first year high school work, is virtually included in the grammar school instruction. About 2 per cent. of the stream passing the period of college life, secures a full, formal, college education.

In the aggregate, too, it is a matter of every-day experience that great strides are being made in every department of science and art, both in the purely scholastic acquisition of fact and principle, and in the

practical application of these facts and principles to commercial, economic and humanitarian ends.

It is impossible to compare past, present and future advances with regard to whether any one period has done, is doing, or will do all that might reasonably be required. The past has the specious advantage of being able to make initial discoveries, the present and, still more, the future, the advantage of a foundation of fact and experience upon which imposing structures may be built. "What was the principal factor that led to the discovery of America by Columbus?" asked the examiner, probably to elicit a fourth-reader moral as to his perseverance. "The fact that nobody had discovered America before him," replied the little girl, with a shrewd philosophy which must not be forgotten in any similar discussion.

There can be no more Columbuses, Cabots, Drakes and Hudsons. There can be Fremonts, Lewises and Clarks, Gunnisons, only for central Africa, South America and the polar regions. So, too, in anatomy, it is well nigh impossible for any present or future discoverer to find a monument like that of Sylvius, Rolando, Steno, Spigelius and many others. There are no more large planets to be discovered and less than a dozen germs of recognized, specific diseases. Even general principles of science are, probably, for the most part discovered, though we may expect occasional brilliant analogues of Roentgen and Curie.

Even in the ordinary walks of life, originality and mental acumen are judged by higher standards than formerly and the very diffusion of education is liable to foster the pessimistic impression that a general mental decadence has taken place. It ought to be evident that, while the great mass of humanity can be made familiar with at least a fair degree of existing knowledge, we can not directly produce genius by education. Generally speaking, there will be no more great intellects in these days, when every other five-dollar-a-week stenographer is a high school graduate, than in the population of half a century ago when less actual academic training was a mark of personal effort and placed its possessor apart from the common herd.

The general diffusion of learning, not only places a vastly higher standard for originality but leads to a personal distrust of one's ability to achieve and the utility of attempting any great intellectual task. The modern embryonic Franklin realizes, perhaps too well, that it is futile to attempt to accomplish anything not already known with home-made, simple and inexpensive apparatus. Unless he can devote a lifetime to the study of electricity and can command an elaborate equipment, he very wisely confines his attention to homelier and more practical interests, or,

if he chooses the study as a means of diversion, he spends relatively more time in following the work of others, better able than himself, to achieve great things, and it often happens that a man or woman, of really exceptional attainments in some department of literary, historic or scientific study, who would have been considered a leader of thought half a century ago, modestly keeps his hobby to himself, from the conviction that however far he may have gone beyond the average attainment, only those who have gone much farther than himself, should venture to act as guides.

There is, unquestionably, more assimilation of the work of others, more dependence on objective observation of definitely established facts and less meditation and philosophizing than formerly. In medicine, especially, many writers have deplored the fact that we rely too much on the microscope, chemic reaction and physical sign than on the fine clinical sense of our forefathers. Undoubtedly, we have sometimes followed too literally the caution: "Don't think, experiment!" But on the whole, the trial of disease and therapeutics by evidence, rather than judicial pondering on the apparent merits of the case, has brought good results.

Some time ago, a good illustration was afforded of the trend of mental activity from the past to the present. We were requested to look over a scientific treatise by an old man who had been considered a genius fifty years ago but who had led an impractical, secluded life and had succumbed to a fatal disease. The treatise was on the gyroscope and was a good representative of the old-fashioned original, meditative intellectuality. Rather early in the work, the author had got off the track by assuming that the gyroscope, because it did not tend to fall sideways, had no weight. The remainder of the work was wonderfully interesting and pregnant with practical possibilities of revolutionizing mechanics—that is to say, practical if based on a correct principle. This intellectual hermit had spent years in attempting to secure the acceptance of his principles and had become soured because the modern spirit of commercialism and superficiality had not appreciated his attainments, formerly recognized, at least in his own small town. Apparently, in all those years, it had not occurred to him to test the remarkable results of his cogitation by studying the work of others along the same line, nor by actual experiment.

Perhaps this is not a fair example, but we can not subscribe to the pessimistic view that our average mental acumen is depreciating. We are broader and, at the same time, as individuals more limited in our study and more modest and more disposed to avail ourselves of the help of others.

We are wont to forget that much valuable industry, conscientious effort and even a high grade of intelligence, must be devoted to the execution of principles already elaborated. The motor man who drives his car properly and safely is quite as indispensable as the man who developed the possibility of the trolley system. So, too, the physician who makes careful, systematic analyses of urine is as necessary, even more necessary from the individual standpoint, as Bright or any one of the modern scientists who have confused us with the dubious results of tests of too great delicacy. Thus, in every branch of industry, there are men of considerable, even great ability, engaged in useful work and carrying heavy responsibility but producing no novel results. In many instances it is true, this work, however valuable, is merely a matter of routine and requires no great amount of intellect; in other instances, there is no doubt but that, under the conditions pertaining half a century ago, these same men would have been famous as originators. In our own profession, the change of circumstances in this regard, has been extremely rapid. Even ten years ago, clinicians, without taking too much time from their practice, made many valuable contributions to medical science. Already, it has become almost impossible for them to make further original researches, owing to the increasing complexity of the problems presented in passing from initial principles to details requiring elucidation.

These are, of course, mere illustrative examples, but it seems to us that in nearly every line of progress we have reached a point at which further advances require too much concentration of effort on technicalities for the practical worker. In choosing a life work, many men have a decided preference for the direct accomplishment of practical results. Without in any sense ignoring the ultimate usefulness of all acquisition of knowledge, especially when its adaptation is already foreseeable, they wish to cure disease, to transact business, to build railroads and bridges, rather than to teach and experiment with the remote object of enabling others to accomplish these practical results. The choice may be a mere preference, perhaps a mere prejudice in favor of pragmatism, or it may depend upon an appreciation of personal qualifications. At any rate, once made, it almost precludes the possibility of accomplishing much in the way of original discovery.

Looking back over the work of the pioneers in discovery, we find that they were, for the most part, practical men in the very direct sense, rather than scholars. Indeed, it seems that the capacity for thorough research work, with its multiplicity of details is not usually compatible with the breadth of

vision requisite for the discovery of first principles.

We have already reached a point where fresh discovery is less important than careful and skilful execution of principles thoroughly understood. For example, new motive power for transportation is less needed than safety of management. The telephone fails of its ultimate possibilities, not so much on account of lack of perfection as of short-sighted business control which renders it too expensive for universal use. Even along scientific lines, the development of a phonographic attachment and the utilization of automatic connection, indication of calls in absence and similar inventions by no means recent, are more important than conceivable novelties. In medicine, we could exterminate typhoid and render tuberculosis much less prevalent and diminish the incidence of many other diseases, without a single new discovery but merely by the application of firmly established knowledge.

THE COLORED SHIRT.

THE Lancet has inveighed against the colored shirt. We beg respectfully to caution our highly esteemed though somewhat prolix contemporary—respectfully, as should a son addressing his father, or rather a grandson addressing an atavistic relative; for the Lancet had attained to a grandfatherly maturity even before we of the Medical Times were born. The Lancet is taking a dangerous course; next, we fear it will object to the peek-a-boo waist—which would certainly be tantamount to journalistic suicide. Medical science, though so potent in all other respects, cannot cope with æsthetics and the fashion. It never could. It has inveighed, for example, against such things as tight lacing and French heels until it has become black in the face and in imminent peril of apoplexy; but for all its pains it has got only a snap of the fingers in its face from fashion and its notaries.

The Lancet objects to the colored shirt on the score of hygiene. This garment is made up of dyed linen, the dye being often injurious; and being colored it conceals dirt and perspiration longer than would the white garment; it is sure to be worn too long, thus greatly increasing the "chances of picking up bacteria." All these attributes of the colored shirt, believes the Lancet, are inimical to health and therefore to be reprobated. These objections to the colored shirt have raised a prodigious potter in journals of haberdashery and among comic writers at their wit's ends for something to write about in this silly season. One newspaper, for example, has become quite unduly heated about its cervical region—an injudicious state of mind in these midsummer

days. It vehemently denies that there is any danger whatever in bars and stripes and spots and will not agree that a man is running the least risk even when he affects a solid blue.

On the whole, in fear that medical journalism and especially our grandfatherly contemporary has been coming it a little too strong of late on matters of hygiene. Especially had the subject of bacteria best be given a little rest. A microscopic examination of the accumulations upon a hair brush was recently set forth in a medical journal, and of course promptly quoted in a newspaper for the edification of its lay readers; the horrendous report cited that something like a dozen varieties of bacteria were found. Well, what of it! In our medical college days our brilliant and enterprising professor in bacteriology investigated a scraping from the mouth of an obliging fellow student, a Texan. Twenty-six varieties of bacteria were found and duly tabulated. The list was most startling and formidable, beginning with *Bacillus Prodigiosus*. Yet our Texan colleague, though rather too odoriferous for agreeable juxtaposition, was then in excellent health; and we make no doubt that he has been and is in the full enjoyment of this condition up to this hour.

The New York Sun ironically observes that everything we do, everything we eat, everything we wear, has been shown over and over again to be deadly. There is not a moment in our lives when we are free from danger. Our days have been elaborately examined and described from the hour of rising to bedtime; and it has been plainly shown that all our acts are virtually suicidal. We go to the bath, and instantly are confronted with the dreadful danger of the sponge; wherefore many timid souls have taken to loofahs and artificially constructed devices of rubber—all really unnecessary and none so comfortable as the sponge. Soap—water; these are dangerous too and full of mischief, yet people continue to use them in the most reckless way. They brush their hair with the deadly hair brush, they put on their fatal shoes and so forth; and then they go downstairs to a breakfast of poison. Even on the way downstairs they run a frightful risk. We have no superintendent of stairs, and the builders are allowed to do as they please; the result is that the steps are of no fixed height, and if you are in a strange house, heaven help you! It is not the fault of the Lancet which has strongly urged the standardization of staircases.

We submit that a leaven of common sense is appropriate to hygiene as to all other things human. Besides, there is the general practitioner; if everything is going to be prevented, where will the poor man be?

SOCIAL LIFE IN COLLEGE.

IT sometimes appears to the public that the boy attending college repeats the experience of Yankee Doodle—"There were so many houses, he could not see the town." So much attention is given to fraternities, card, chess and similar clubs, student bodies, ordinary social engagements and the special activities of college boys out for one kind of a lark or another, that it seems that little time can be left for study. Even alumni and faculties often discount on the general broadening influence of the university atmosphere and give the impression of belittling the routine work.

A good fraternity, however, not only assures a very valuable affiliation which lasts throughout life but aids directly in certain forms of study and keeps unformed minds under a restraining influence. Many a boy resists temptations and does good work in his classes, not so much for his own good as to reflect credit on his fraternity. On the other hand, a fraternity chapter that has a low moral and intellectual tone, may ruin a boy. Fortunately, at any one college, it rarely happens that more than one or two chapters—often none—are of the latter class.

In the main, too, the other activities of student bodies are helpful in religious and educational training, they afford proper outlets for energy that cannot all be wisely spent in one direction, and they teach the individual to act as a unit of a social organization.

The public should remember that, in the world at large, we hear very little of the actual daily routine of the physician, lawyer, business man or laborer. It is only when he plays or takes part in something outside of his occupation that we are likely to hear or read about him at all. Thus, it is quite unfair to the college boy to assume that the athletic and social manifestations of his activities, much less the very occasional outbreaks of more or less innocent mischief, represent the sum total or more than an insignificant fraction of his life. So far as our personal observation and the reports of those much better able to judge, can be relied on, most of these young fellows at college, are putting into each day, quite as many hours of hard mental work as we devote to our practices, medical journals, societies and laboratories, or as any average adult devotes to his life work. And we should remember that they are doing so without the immediate pressure and incentive of earning money, that they are less mature than ourselves and that, away from the restraint of home life, they are directing their energies from day to day and leading clean lives. There are exceptions of course, but it is doubtful whether the unfavorable exceptions are as numerous as among adults and such ex-

ceptions are balanced by numerous instances in which mere boys are practicing self-denial, leading a double life in the sense of earning their own living and attending to their college duties, and, in short, setting examples of industry and far-sightedness to ourselves.

Indulged in moderation, the social activities of college students are quite as wholesome, both as recreation and training, for life as the social diversions of adults. We do not believe that the broadening influence of University life is so valuable as the actual acquisition of knowledge and mental discipline obtained in the regular course, in spite of the opinions often expressed in this direction. Such a view reminds one too strongly of buying goods for the sake of trading stamps, premiums or the boxes in which they are done up. But we do believe that athletics and various other college enterprises are worthy of serious consideration, and that every student should be enabled to indulge in them according to his individual peculiarities.

THE RAT AND THE FLEA.

THE principle charge which is to-day to be made against the flea is that it is the partner of the rat in the propagation of the bubonic plague; it would indeed seem to be the greater culprit of the two. The bacillus pestis exists in the blood of rats infected with that disease; these vermin are in turn infested with fleas, which by their biting transfer the bacilli to other rats. When the rats die the fleas desert their bodies for other rats or for human beings. The fleas are really the essential factors in conveying the plague bacillus to man; possibly also they convey it from man to man, from the plague stricken to healthy individuals, without any intermediate part being played by a rat. Man, it would seem, plays a relatively unimportant part in the direct propagation of this dreadful infection, except perhaps in the comparatively rare pneumonic form, where the sputum may be infected as in tuberculosis.

A mathematical gentleman engaged in the work of our Department of Agriculture in Washington has made an interesting though certainly gruesome computation concerning the rat. This rodent breeds three or four times a year. The female has a litter when from four to five months old; this averages ten, but oftentimes is fourteen or more. It is conservatively estimated that a single pair, breeding without check or violent death, three litters of ten each in a year, would in three years have a progeny of more than twenty millions; the eleventh genera-

tion would begin the fourth year numbering over one hundred millions. Thus much for the rat. But as to the flea, which lives its parasitic life upon the rat—!

We need, in our latitudes and in our civilization, fear but little epidemic of the bubonic plague; we could not have among us such "visitations" as almost constantly obtain in India or as were suffered in Medieval Europe. This disease evidently exists in Venezuela to-day; but our Quarantine authorities are fully equipped to prevent its dissemination among us. Dr. Alvah H. Doty has recently epitomized the precautions which are now taken in New York harbor.* These are in many respects akin to those employed in detecting other infectious diseases on incoming vessels. There is careful inspection, disinfection and detention of suspected cases. The mild, ambulant or unrecognized sufferer is well understood to be a most dangerous factor; wherefore all vessels coming from an infected port are held until every individual among its passengers and crew undergoes surveillance. Neither visual inspection nor mere statements suffice. The temperature of all is taken; a glandular examination is made in suspected cases. Except in rare instances, cargoes, baggage and the clothing of well persons are not considered media of infection. Masters of vessels from infected ports must make affidavit that they have taken great care in loading; that rats have been prevented from entering the vessel; the cables connecting the vessel with the dock must have been guarded to prevent the running of rats upon them; all rats found at the port of departure and during the voyage must have been burned in the vessel's furnaces and not thrown overboard. After removal of the cargo there is sulphur disinfection, not with the suspicion that there are diseased rats, but to clear the vessel so that none may in future be a means of infection. Most vessels coming from infected ports are ten days in transit (the incubation period of plague); but the passengers and crews of those which arrive within that period must either remain in Quarantine or are kept under observation at their homes until ten days have expired from the date of the ship's departure from the stricken port. By such means as these two cases were detected at Quarantine on September 18, 1899; they did not reach the city. Since that time no cases have appeared in New York harbor.

It is thus of interest that the Public Health Service at Washington is about to undertake a campaign against the flea similar to that historic and most effective one which was waged against stegomyia. Of course the plague is not to be feared from the flea unless the latter has bitten an infected rat. Never-

theless it is not at all unlikely that other pestilences than bubonic plague are propagated through this medium. There would seem to be no reason why any infection of which the specific cause is in the blood could not be conveyed by fleas; further investigation will probably establish this hypothesis upon a sound basis. Such diseases as typhus, leprosy and other infections to which squalid and vermin-ridden people are prone, may thus originate.

THE WORK OF DR. GORGAS.

WE some time ago commented upon the advantageousness of a canal through the Panamanian Isthmus. We noted how many men during several centuries past (the greatest among whom was De Lesseps) have recognized the overwhelming importance of such a waterway, by which vessels would be saved thousands of unnecessary miles and weeks or months of time. Here is indeed a project of the very first importance to the commerce and the prosperity not only of the Americas, but also of the whole world. All civilization has been needing most urgently such a canal; and the work which is now in progress is, we believe, absolutely unprecedented in history as regards the benefits which mankind in this and in countless generations in the future will derive from it. After most disheartening failures ultimate success is now assured beyond peradventure. What is it which now makes entirely feasible the near accomplishment of this colossal enterprise?

Unquestionably it is the achievements of Dr. Gorgas and his associates, who have turned the Canal Zone from perhaps the deadliest pest hole in the whole world to one of its most salubrious regions.

What the tropics used to be before the beginning of this twentieth century may be recalled from a reading of Dr. L. L. Seaman's fine paper in the N. Y. Medical Journal of February 22, 1908, in which he tells how, for centuries, the western continents between the tropics, both north and south, have stood in constant dread of the most deadly infections, especially yellow jack. Terrible epidemics ravaged the coastwise cities despite rigid quarantines, which were quite ineffective while stegomyia thrived. But a few years ago, in the harbor of Santos, thirty-one ships of almost every nationality rode at anchor for months without a living creature aboard; many of their masters and crews having fallen to "yellow jack," with little possibility of replacing them.

It is indeed gratifying to note the appreciation by John G. Leigh entitled "America's Triumph in Pan-

*N. Y. State Jour. Medicine, May, 1908.

ama," in the *Lancet*, which is set forth in the *Journal of the American Medical Association* (July 4, 1908). Mr. Leigh foresaw, in 1905, that the success of this undertaking would depend not on engineering skill, but on the question whether the health environment could be so ameliorated as to remedy the disastrous conditions which had been responsible for previous failures. He now observes, in very cordial terms: "All these appointments (made by the present administration) have been fraught with happy consequences; and none more so than that of Colonel Gorgas, whose promotion to the rank of commissioner must be regarded, not only as a well-merited personal compliment, but also as a national recognition of the immense services which are being rendered to the United States in the prosecution of its great undertaking by members of the medical profession. And Mr. Leigh explicitly attributes to Colonel Gorgas the fulfilment of his prophecy of 1905, that the canal would "during construction prove the most striking lesson ever offered for the benefit to be derived from a well-organized sanitary organization associated with a great public work." And he well concludes: "It was under American administration that the knowledge and resources of modern science were applied to the hygienic redemption of the once noisome isthmus. Such fruits of labor in this direction have already been gathered that they promise to rival as a worthy monument of American achievement even the canal itself." Truly the American Medical Association has greatly honored itself in making Dr. Gorgas its president.

MODEL TENEMENTS.

THESE structures, in which laboring people in and near cities are assured healthful and comfortable homes, at very moderate rentals, are now an established institution in Boston, New York, Chicago, Philadelphia and Washington. These enterprises are all based upon the motto, at once both humane and eminently sensible: "Philanthropy with 4 per cent." In London there are more than one hundred million dollars invested in model tenements. In Washington the unique feature obtains of setting aside the amount of one month's rent each year for interior repair, by which means is assured the proper care and condition of the dwellings. The difference between the cost of necessary repairs and this month's rent is then returned to the tenant, who thus finds an incentive to preserve as well as possible his apartment. In the Phipps benefaction in New York City it is especially provided that no ren-

tals shall be below the market price, so that no injustice is done the landlord who depends upon his rents for his income.

Such enterprises as these are certainly excellent business investments, as anyone must conclude who has examined the statements of Dr. E. R. L. Gould, the President of the City and Suburban Homes Company, which has its offices in New York City. Dr. Gould has recently been making especial presentations both to his colleagues in medicine and to the general public, because of the great distress which lack of work has in the last twelfth-month brought upon laboring men, especially those in the building trades. He holds that the humane capitalist could at this time do no better than to subscribe for its unissued stock of one million dollars, in order that more tenements may be built upon the as yet unused lots which it owns. Such subscriptions would serve to give work to the unemployed; new homes would thus be created for those with whom the struggle of life is hardest; the community would be improved; and the financial return to the humane capitalist would be substantial and unusually secure. Dr. Gould's Company recently had for dividend disbursements 4.5 per cent. a year; it will pay ultimately, he believes, five per cent. on its investments; it has back of it an unbroken dividend record of nine years; its investments have reached five and one-half million dollars; its losses during the last five years from unpaid rent and bad debts have amounted to "fourteen one-hundredths of one per cent." Dr. Gould well accentuates (as he certainly is entitled to) the stability of such investments; whilst, on the other hand, recent fluctuations in railway and other stocks and bonds are "facts that some of us are too sensitive to talk about. And he well points out that such investments are not alone for the very wealthy; the shares his company offers are ten dollars each. Surely "this form of philanthropy should be as attractive as it is economically sound;" it is infinitely less dangerous regarding the stamina and the morale of the poor than the very best form of emergency relief that has ever been devised. "It enables self-respecting wage earners to work at their own trades, at current rates, not interfering with the operation of ordinary economic principles; and it permits public spirited citizens to help in a rational business fashion to bring about results that are socially and economically profitable to themselves and to the company."

No doubt Dr. Gould's observations would apply equally well to other great communities. It appears to us they should particularly interest the physician. There is no greater factor making for the physical regeneration of our people than the substitution of decent tenements for such old, rickety and germ-

ridden structures as have hitherto housed the very poor. There is much talk of congested populations in great cities. As a matter of fact, in every city, howsoever overcrowded, there are many districts available for the building of model tenements. During the next decade as in the ten years past, large urban sections throughout the United States will undergo rebuilding upon the principles of modern sanitary science. There is no kind of enterprise more worthy the physician's encouragement; probably none in which he would realize as well or as securely upon his investments.

"AMBULANCE KILLED A CHILD."

Thus is headed an item in the lay press describing how a child five years old while playing in the middle of the street in a congested metropolitan district, was knocked down and killed by an ambulance. The driver did not know of the accident until informed by the crowd of bystanders. He immediately shouted to the physician, who was caring for the patient within the ambulance and who, aside from the jolt when the child was hit, noticed nothing unusual. The driver was arrested on a charge of homicide; many, however, testified at the coroner's inquest that the death was not due to his carelessness. All the testimony was to the effect that he had been ringing his gong and proceeding with caution.

This melancholy incident has its lesson which should not be permitted to pass unstated. It is a lesson, not for the driver, but for the parents of careless or misbehaving children in crowded parts of the city. It is well known that many children living in the neighborhood of hospitals for the poor find it a pastime, pleasurable in proportion as it is exciting for them, of standing legs apart in the way of an ambulance until the horse is nearly upon them and then jumping aside. Thus is his work made a constant and a heart-wearing terror for the humane driver. It is of course his business to reach as speedily as possible the patient for whom he has been sent out; and to whom the delay of a fraction of a minute may be a matter of life or death. It were difficult to imagine a more dire conflict between the ambulance driver's desire, on the one hand, to reach his destination quickly and on the other hand the fear he must have of running down a careless or a perverse child. Parents should most uncompromisingly, if need be, whip out of their offspring any tendency for such conscienceless and dangerous sport as is here indicated.

Dr. Osler.—We beg to felicitate Dr. Osler upon having attained his sixtieth birthday. May nothing vital happen him; but on the contrary at least two full score years of continued and conspicuous usefulness. He has now joined a most goodly brotherhood which has in the past included such men as Cato, who at eighty studied Greek; Plutarch, Latin,

and Socrates, music; the sage Arnauld, who translated "Josephus;" Gladstone, who at four score overthrew the Conservative Government; Goethe, who at that age completed "Faust;" Hahnemann, who married and continued his work for a decade; Simonides, who won a national prize in poetry; Ranke then began and completed his "History of the World;" Buffon finished his forty-four volumes of National History; Palmerston was England's Premier; John Quincy Adams still took part in our country's legislative proceedings; Baucroft published his "History;" Voltaire wrote "Irene," and Landor his "Imaginary Conversations;" Newton and Spencer carried on their epochal investigations; Von Moltke generalized the Prussian Army; John Wesley continued to preach, and Michaelangelo and Titian to paint; Isaac Walton fished and wrote; Comaro set the example for Horace Fletcher and Chevreul demonstrated his colors—all, recently recorded Dr. Dorland, at the age of eighty.

The Little Men of Science.—Lord Rosebery observed, concerning Lord Kelvin, "what most struck me was his tenacity, his laboriousness, his indefatigable humility. In him was visible none of the superciliousness and scorn which sometimes embarrass the strongest intellects. Without condescension he placed himself at once on a level with his companion. That has seemed to me characteristic of such great men of science as I have met." The Saturday observes, apropos this cordial appreciation, that while the great men of science are like this, the smaller men who have never originated anything, but have merely tried to suck in the ideas of the masters, so often are impatient, spiteful, jealous, assertive, impressed as profoundly by their own superiority as by the stupidity of nine-tenths of humanity. "That this is the attitude of the lesser fry of science, its sticklebacks and tadpoles, no one will deny; the little scientist is almost invariably too clever by half; he hangs up pictures of Darwin in his study; his talk is of Darwin; yet he has as little of the heart as he has of the brain of that great master." A trifle hard, we think, on the one and two talent men in science; we have not found megaloccephalism very prevalent among them.

An Anti-Consumption Campaign is on in Brazil, involving an expenditure of a million and a quarter of dollars; the proceedings will be as thorough as against yellow fever. The material features of the campaign comprise compulsory registration; the complete assumption of charge of all cases by the authorities, the infectious cases being segregated and supported by the public (a rather drastic measure); hospitals for advanced cases; and hotels, boarding houses, agricultural colonies and sanatorias for incipients; the absolute exclusion from Brazil of any person or animal having tuberculosis; the inspection of all foods and material likely to carry tubercle bacilli, with power to destroy anything infected; and the betterment of food, housing and other conditions of life for the large mass of the population in which tuberculosis is raging, for the prevention of the disease by fortifying the people against it by improving their general health.

BIBLIOGRAPHICAL

Medical Gynecology. By Samuel Wyllis Bandler, M.D. Fellow of the American Association of Obstetricians and Gynecologists, etc., etc. With original illustrations. Octavo pp. 676. Price \$5. Philadelphia and London, W. B. Saunders Company, 1908.

This eminently practical work from the non-operative side of gynecology, is viewed from the standpoint of the symptoms, the disease, the bimanual and microscopic findings, and the general physical and nervous state.

The knowledge gained by studying from these different points of view, give a more distinct mental picture, and furnishes logical co-ordinated conclusions.

In no field of medicine is conservative treatment of greater value and the author shows the relation which pelvic abnormalities really bear to the physical and mental state of the patient in order that gynecologic diseases may be dealt with more intelligently.

The life and make-up of women are such that physiologic processes, heredity, predisposition, mental perturbation, the emotions, marital relations, etc., have an important bearing, and if we would understand the meaning of symptoms, we must make a study of these factors.

The text is well written and fully illustrated, and the student and the clinician will find the book of great service.

The Harvey Lectures. 1906-07. Philadelphia: J. B. Lippincott Co., 1908.

This volume of Harvey Lectures is a worthy successor of the first volume. It was a most fruitful idea that led Dr. Lusk and Dr. Meltzer to bring within the reach of the medical profession of New York a series of addresses of masters of research on their special work and its bearing on the interests of the physician generally. Anyone desirous of a chance for glimpses into the workshop of our ablest workers finds in this volume a series of extremely suggestive and stimulating examples.

The first lecture gives the principles of Vaccine Therapy by its originator, Sir Almroth E. Wright (p. 17-63). Another exceedingly important and promising field of bacterial symbiosis is covered by Prof. C. A. Herter, with his study of the common Bacteriological Infections of the Digestive Tract and the Intoxications arising therefrom. Vasomotor Relations (by Prof. W. T. Porter) take us to one of the most skilled workers on the vascular apparatus. With the Myelins and Potential Fluid Crystals of the Body, Prof. J. G. Adami brings before us a new field of possibilities of research in statu nascendi. Dr. Meltzer discusses some of the most practical reflexions in biology in his "Factors of Safety in Animal Structure and Animal Economy," full of interesting and stimulating facts and viewpoints. Metabolism during Inanition (Prof. F. G. Benedict), Prof. Wilson's "Recent Studies of Heredity," "The Genetic Interpretation of the Variations in the Genito-Urinary Tract," by Prof. Huntington, takes us out of the immediate routine of medical thought. Prof. Councilman's "Changes in the Lymphoid Tissue in Certain of the

Infectious Diseases" is a remarkably thorough presentation of histology at its best. Prof. Muller's "Nervous Disorders of the Heart" brings us back to clinical interests.

The volume should be one of the most acceptable companions in hours of half-leisure, and is really a very unique collection of which the American Medical Profession might well be proud. A. M.

Insomnia and Nerve Strain. By Henry S. Upson, M.D. Professor of Diseases of the Nervous System in the Western Reserve University, Attending Neurologist to the Lakeside Hospital, Cleveland, Ohio. With skiagraphic illustrations. 12mo., pp. 142. Price, \$1.50. G. P. Putnam's Sons, New York and London.

The author of this intensely interesting little book says that among the diseases to which mankind is subject, dental caries is probably the most common, and of dental caries and other disorders of the teeth insomnia is much the most common symptom, often occurring without local pain or indication of its place of origin. Clinical reports are given in proof of his statements.

A case of melancholia is reported cured by the removal of an impacted third molar tooth, and many other serious mental lesions are also reported to be dependent upon fault with the teeth as shown by the skiagraph.

This investigation is within the scope of any practitioner of medicine, and the subject is worthy. The book should be read by every physician.

Sex of Offspring. A modern discovery of a primeval law. By Frank Kraft, M.D., Editor of the American Physician. 12mo. Pp. 112. Price, \$2.00. B. Barsuette, Cleveland, Ohio.

The author of this little book says he "writes as a collaborator and investigator," and he has certainly presented about all that is known on this subject in a most readable form.

Dr. T. E. Reed published a series of articles in the Medical Times, Sept.-Dec., 1906, and Jan., 1907, on "The Sex Cycle of the Germ Plasm," in which he discusses the tidal curve in its various bearings. The subject is worthy of further investigation.

Religion and Medicine.. The Moral Control of Nervous Disorders. By Elwood Worcester, D.D., Ph. D.; Samuel McComb, M.A., D.D.; Emmanuel Church, Boston; Isador H. Cariat, M.D. Octavo pp. 427. Price, \$1.50. New York: Moffat, Yard & Company, 1908.

The object of this book is to describe in plain terms the work in behalf of nervous sufferers which has been undertaken in Emmanuel Church, Boston, of which we have already said much editorially.

Our readers now have an opportunity to get the whole subject at first hand, and we commend the book to them.

The Correction of Featural Imperfections. By Charles C. Miller, M.D. Second edition enlarged. Including the description of numerous operations for improving the appearance of the face. 160 pages. 96 illustrations. Prepaid \$1.50. Published by the author, 70 State street, Chicago.

International Clinics, a quarterly of illustrated clinical lectures and especially prepared original arti-

cles on general medicine and surgery, edited by W. T. Longcope, M.D., has been received from the publisher, J. B. Lippincott Company. This series (Vol. II, 18) contains articles on the treatment of scarlet fever and syphilis, experience with bacterial vaccines, serum treatment of bacillary dysentery and the treatment of hæmoglobinuric fever.

Dr. John B. Roberts has an interesting clinical lecture on reconstructive surgery of the face.

There are over three hundred pages of interesting practical matter.

A Text-Book of Human Physiology, Including a Section on Physiologic Apparatus. By Albert P. Brubaker, A.M., M.D. Professor of Physiology and Hygiene in the Jefferson Medical College, etc., etc. Third edition, revised and enlarged, with colored plates and 383 illustrations. Philadelphia: P. Blakiston's Son & Co., 1908. Octavo pp. 752. Price, \$3.00.

It has required the addition of about fifty pages and a number of new diagrams to bring this standard work down to date. The whole text has had careful revision and is condensed within convenient limits. The book cannot be commended too highly as a text-book as it is written by an experienced teacher especially for students and general practitioners.

It will interest our readers to learn that a new book of Dr. A. Rose, entitled "Medical Greek," of 400 pages, is now in type. In this book he has collected articles published by himself and others, referring to the onomatology question and he has added a "brief guide to the learning of modern Greek for those who know classical Greek."

It will interest our readers also that his beautiful dream has been realized, that one of our noblest medical institutions has adopted the resolution to make use of scientific terms only in their transactions, in order to avoid barbarisms in their publications.

An International League of Total Abstinence has been announced in the *Allg. Med. Central-Ztg.*, (March 21, '08); every physician willing to co-operate and to have his name added to the petition, should send his name to the Secretary, Dr. Holitscher, Pirkenhammer bei Karlsbad, Bohemia. An appeal addressed to physicians in all lands and of all tongues urging them to co-operate is as follows:

"Appeal from the physicians of all countries to governments, rulers, legislators, teachers, clergymen and all who have the welfare of the present and future generations at heart. We, who are members of the medical profession and by our studies peculiarly qualified to recognize and appreciate the nature and the action of alcoholic drinks, do declare it as our settled conviction that these drinks are entirely unnecessary and extremely injurious, so that the evils resulting from the drinking of alcoholic beverages should and must be prevented and exterminated. Above all, the young should be educated in every possible way and by example and be protected by legislation, so that they may learn to refrain from alcoholic beverages. This must be done in order to promote and ensure the happiness, welfare and progress of the nations."

CORRESPONDENCE

NOTES ON AN ENGLISH TRIP.

To the Editor of The MEDICAL TIMES:

While it is obviously unfair to judge a people from a very brief sojourn, England impresses one as being badly but heartily fed. The staple meats are abundant and of about the same price as in the United States. Vegetables are much less in use, even potatoes being frequently omitted from the bill of fare of the cheaper places, so that a breakfast may consist of meat or fish, bread or toast and butter and the everlasting orange marmalade, with tea. The daintier and more fancy meats, shell fish, etc., as well as the better class of desserts are to be found only at the higher class restaurants and hotels and the moderate priced places which list such dishes are often "just out."

Coffee is of two grades, bad and extremely bad. The former is the rank Central and South American kind—or a similar kind. The latter has the same flavor but is not even strong. At the shops—our word "store" is quite commonly used now for the larger establishments—the geographic distinctions of different kinds of coffee are not in use.

Except at expensive places, candy is stale and of about double the price current in the States, for comparable grades. It is used much less than with us.

Afternoon tea is almost universal, sufficiently so to interfere with the higher grades of business and professional work. Except in London, pretty nearly everything is closed at 11 o'clock, even the hotels, although the better ones have a night porter. Whether the English are early risers or not, it is difficult to say, but they are not correspondingly early workers.

One cannot avoid the impression that the average American diet, relatively less in proteid—and especially in meat proteid—and greater in sugar, with three instead of four meals and with viands that appeal more to the appetite, actually allows a greater amount of work to be done with less sleep.

The writer recalls with pleasure and gratitude a luncheon with Dr. Osler and his family at Oxford. In spite of Dr. Osler's protest that it is bad form for a professor at Oxford to do any work, one can readily see that he is actively engaged in research and consultation practice. His statement is true in the sense that at Oxford the professors are relieved as much as possible of routine work which can just as well be done by assistants and are sufficiently paid to enjoy an ample though not ostentatious life, without dependence on the more irksome part of practice. It would be well if our own universities would adopt the same plan.

At the risk of speaking too frankly, there are three things that ought to be put squarely before Osler's detractors. 1. While sceptical of untried and unproved therapeutic measures, he is by no means a therapeutic nihilist, studying disease as a scientific curiosity. 2. He is vigorous and sound in mind and body in spite of being slightly beyond the age which, quoting as a joke, somebody else's remark, he once put as the limit of human usefulness. 3. The signal honor which has given him prestige of the

highest rank has left him absolutely unspoiled. He is just the same kindly, humorous, simple gentleman that he was in Montreal, Philadelphia or Baltimore.

The antiquity which makes Europe so attractive to Americans is not without its drawbacks. The adaptation of modern methods of heating, lighting and plumbing to old stone buildings is not entirely successful. On the whole, the hospitals are more used than in America and, while on the average larger and more imposing, the hygienic conditions are not quite so good and many little conveniences are lacking. Still, it is difficult to state any essential difference to the disparagement of either country.

At Charing Cross Hospital, the writer was very cordially received by Dr. Mott at his ward class, where cases of oesophageal cancerous obstruction, diabetes with acetone odor of breath, amyotrophic lateral sclerosis and pernicious anaemia were well demonstrated. In cord degenerations, Dr. Mott emphasized the secondary importance of extrinsic causes tending to localize the symptoms. For example, the present case was a polisher of violins and guitars and, as the result of his occupational muscular strain, he had a double wrist drop. This hospital is bounded on one side by a street named Agar.

For the first time in 150 years, St. Bartholomew's is asking for funds for extension. On account of the annual athletic events there was little work going on at this hospital when visited by the writer. However, he was invited to make rounds in two surgical wards with Mr. Bowlby and a ward class.

Judging from Mr. Bowlby and a surgeon called by Mr. Mott to examine the case of oesophageal stricture previously mentioned, operations are not so eagerly sought as in America.

One finds much of general scientific interest in the various museums. The Natural History branch of the British Museum at S. Kensington has both its extant and fossil specimens arranged in logical biologic series. Various special cases are prepared illustrating mimicry by insects, etc., parasitism, especially in its effects on crops and trees, poisonous reptiles, melanism, albinism, seasonal change of color of fur and plumage, adaptation of color to environment, etc., Mendel's law of hybridization is illustrated by actual specimens. It is one thing to read the dry description of nuclear combinations and divisions, quite another to study a case starting with a red and a white ear of corn or a waltzing Japanese mouse and a grey mouse and showing their piebald and atavistic descendants through several generations.

For public instruction, there are placed in the first court, where all will see, cases with highly magnified models of anopheles and culex mosquitoes and of the malarial organism. Speaking generally, however, none of the glass models seen either in Oxford or London were equal to those in the Peabody Museum in Cambridge, Mass.

A. L. BENEDICT.

London, June 15, 1908.

OLD-WORLD COURTESY.

To the Editor of the MEDICAL TIMES:

Some time ago we spent an evening with a physician who has acquired a large practice among the

Poles, having learned their language sufficiently not only to understand their histories but to converse with them fluently and to read and write in Polish. Indeed, on one occasion when he was moderately indisposed, we found him passing the time in translating a German poem into Polish.

It is scarcely necessary to state that one having an intimate acquaintance with this people has found that the prejudice often expressed against the Poles, is largely based on ignorance. Indeed, we have been impressed by repeated experiences, that race, religious and class prejudices evaporate on closer acquaintance and that the essential differences which we imagine separate ourselves from those designated by other proper adjectives than our own, become infinitesimal when compared with the broad, common qualities of humanity. We may laugh at the small boy of orthodox but somewhat narrow training who was visiting at his uncle's and who, when called to join in family prayers exclaimed "What! does Uncle Dan have family prayers? Why, I thought he was a Democrat." But, after all, how many adults are there who do not instinctively feel that anyone of another creed, party, nationality or class, resembles himself mainly in anatomy and in the possession of a soul, which latter he consigns to another and usually much less desirable hereafter?

We were particularly interested in an album which the physician mentioned, had accumulated, of birthday, Christmas, New Year's and other greetings and expressions of gratitude on recovery from serious sickness. Some of the cards might be criticised from the aesthetic standpoint and many, of foreign importation, were strange enough from our established viewpoint. But many contained really poetic thoughts, not only ready-made, but extemporaneous and one expressed the patient's gratitude in an original poem of some merit even when hastily rendered into English.

In former years, the physician's fee was, even from the legal standpoint, strictly an honorarium, a voluntary gift of gratitude. We understand that it remains so, at least in so far as the professional if not the legal interdiction of the rendering of a bill is concerned, in some European countries. Until comparatively recent times, even after the physician's services had become recognized as a basis for a claim to be presented in a businesslike manner, it has been the custom for patients to make presents to their physician, either at the usual anniversaries when gifts are in order, or as a direct recognition of some signal service. This custom still persists in many localities and in many clienteles. So long as the present was of considerable intrinsic value, the custom was a bad one, in that it either interfered with the business side of professional practice or involved a sense of obligation on the part of the physician which, obviously, as a rule, exceeded the value of the present.

But the little example described of the transplanting of an old-world custom, seems to us peculiarly graceful and touching. The modern conception of medical practice as a nearly pure business transaction, with little more of the personal element than in any other business has its advantages. So, too, the greater freedom with which the patient employs

one or another physician at will, unquestionably conduces to greater effort in legitimate competition so that both physician and patient is benefited. Yet the old-fashioned permanency of relation and loyalty involved in the conception of the family doctor are items of both sentimental and practical moment and, while personally engaged in a specialized practice whose personnel is a rapidly shifting one, we believe thoroughly in the wisdom of adherence to a family physician, excepting in emergencies, or in such conditions as require some special attention, and we are glad of any custom which emphasizes and tends to retain the personal affection and allegiance of the laity to the medical profession.

THE AUTOMOBILE.

To the Editor of the MEDICAL TIMES:

In April, 1906, the *Journal of the American Medical Association* devoted a large part of an issue to an illustrated discussion of the automobile as a physician's vehicle. A large number of contributors discussed the automobile from nearly every practical standpoint and the most diverse views and experiences were presented, as to economy, efficiency, etc.

It is somewhat disappointing to have to admit that little or no progress has been made toward producing a more practical, reliable and economic car for 1908 than for 1907.

As regards motive power, steam has been almost entirely abandoned. Indeed, it is not improbable that railroads will soon replace steam with electricity, conveyed by a trolley system, or with gasoline or some similar source of energy for light passenger traffic.

No notable improvement has taken place in the electric automobile, which has the advantages of safety and convenience—the latter, however, mainly because repair en route is hopeless—and the disadvantages of a comparatively fixed and short radius of action, a long and expensive recuperative period, and a pretty definite limitation of its motive apparatus, the battery, to about 5,000 miles, when the expense of renewal is relatively large.

The present availability of the electric automobile for physicians is limited to those having a nearly exclusive city practice, in a fairly level place, with good pavements, and with a mileage of not over 30 to 50 miles a day, with practically no demand for service in an emergency. Counting merely the life of the battery and the cost of charging, the expenditure per mile is about ten cents. Otherwise, the maintenance of an electric automobile is cheaper than of a gasoline machine, but largely or entirely because it cannot be used so much as the latter nor subjected to so great strain by high speed. Comparison with a gasoline machine driven at the same rate of speed and the same number of miles a day would be in favor of the gasoline machine.

Edison claims to have nearly ready for the market a much lighter, cheaper and more efficient storage battery than any hitherto used. There is also a general agitation for a reasonable profit on electric current. With these practical improvements it is quite likely that the electric automobile may, within a few years, become the most economic and reliable for the use of the average physician.

Other forms of stored energy, as compressed or liquefied air, remain merely dreams for the future.

The gasoline car is still a heavy, expensive and treacherous but fascinating and speedy vehicle. A great many physicians claim that the smaller and lighter cars of five or six years ago are more reliable and cheaper than the modern ones. While many minor improvements have been made, no radical changes have been made.

As to expense, the average automobile still sells for nearly 100 per cent. above its mechanic cost, and the latter is relatively high, since almost nothing has been accomplished in the way of division of manufacturing labor or adoption of standard parts, since wages are extremely high, and since the demand of the wealthy class which can pay any price for what it wants, has not yet abated. Runabouts which sold for \$500 two years ago, now sell for \$750.

The universal sentiment seems to be that maintenance expense is unnecessarily high, depending very largely on dishonesty—more or less frank—of garage men. As an approximate statement, it may be said that it costs about \$50 to maintain a car of average size by hired help and that the same maintenance may be as low as \$10 (per month in each case) if the owner is a skillful mechanic. In addition a cost of something like \$100 a year must be allowed for tires, and the lifetime of a machine may be counted as three years, whether renewed by annual exchange, or kept in commission by expensive overhauling. That is to say, in addition to the ordinary maintenance, including tires, the full initial cost must be incurred every three years in some way.

Satisfaction or dissatisfaction with the automobile thus depends largely on the personal equation. The purchaser who wants an article to be right and to stay right, and who has no time or inclination to be his own mechanic, almost always regards the automobile as an expensive luxury, more expensive in every way than any comparable equipment of horse-drawn vehicles. An exception must be made in the case of the comparatively few fortunate practitioners who have the knack of attracting patients so that every ten or fifteen minutes of time saved can be converted into an additional fee.

On the other hand, the man who loves to fuss with machinery, who has no inclination for social life and who does not mind oil and grime—and whose patients do not protest against it by withdrawing their patronage—usually finds the automobile less expensive to maintain than a corresponding equipment of horses and buggies, he also travels much farther as a matter of pleasure, and his initial cost and sinking fund is, in the long run, not much greater than for the old-fashioned means of transit.

It may be said that the automobile has already achieved the maximum possible in the way of speed, except for purely racing purposes. That is to say, the average car can go faster than safety—even of a relative degree—permits or than can be allowed in any civilized, thickly settled community.

Tire troubles must persist until better roads and more durable and lighter construction of cars allow the use of solid tires. Rubber is steadily and inevitably growing poorer and more expensive, and there is no satisfactory substitute. Neither is it conceivable that any comparable degree of resiliency in tires can ever be accomplished to supplant the principle of a confined body of gas under pressure. It is, however, reasonable

to expect that lighter and more durable construction and the use of better springs—including improvements already invented—will enable solid tires to be employed for all except racing cars.

Water cooling remains the favorite and its disadvantages are marked and essential. Air cooling devices are so wasteful of oil that it is said with justice that most of them are really oil-cooling devices. It seems reasonable to expect, however, that a genuine, reliable and inexpensive air-cooling device may soon be achieved on a practical basis.

Cranking remains in vogue, though it is obvious that some device for storing energy to start a machine, is perfectly feasible on general principles. Cranking is not only an inconvenience, but a positive danger, a considerable number of fractures having been thus produced.

Ignition is now usually secured by storage batteries, but it seems probable that dynamos, operated by the machine itself, will be mainly used in the near future, the storage battery being drawn upon only at the start, or not at all, the initial energy being stored as compressed air or by some other means.

Gasoline remains the chief source of energy, and even the removal of the tax from commercial alcohol can secure no great additional degree of economy, nor does it seem probable that any great saving on the expense per mile for power developed by explosion, can be hoped for. Obviously, so long as half a ton or two tons are moved to carry every fifth of a ton of human freight, there can be no true economy in this mechanic sense. Yet the gasoline car, heavy as it is, travels more cheaply so far as direct expense for motive power per passenger is concerned, than the average rate of charge for train or trolley, and this factor in expense is the least of all.

It should not be forgotten that the popular demand for a cheap reliable automobile is scarcely reasonable. A class of people—including physicians of average means—that would never have expected to own a carriage (we use the word in its ordinary restricted sense, not in the sense of a buggy or democrat wagon) is now demanding an automobile, and not a little runabout at that. Sixty years' practical use of steam engines on land and water has failed to produce even the expectation of one that can be run without skilled attention and frequent overhauling and repairs. To say that the gasoline automobile should run with no more attention or repairs than a piano, sewing machine, typewriter, bicycle, etc., sounds reasonable, but it is questionable whether the enormous strain of exploded gas, the friction of extremely rapid motion and the constant jar of travel, inevitable in the use of an automobile, will ever permit the development of fool-proof engine, needing no expert attention and requiring repairs only in rare emergency or at intervals of months for cleaning and adjustment. Thus, if an ideally simple and reliable automobile is developed at all, it must be from the perfection of some device for storing energy.

Moreover, it must be remembered that even physicians demand an automobile far in excess of the ordinary standards of horse-drawn vehicles. Self-propelling vehicles resembling buggies, buckboards, etc., are on the market at prices not much greater than for a similar vehicle with horse and harness. Provided that the engines of these automobiles are efficient, they represent

about what ought to be expected at a price comparable to that of the horse-drawn vehicle.

Again, the average purchaser is not contented with a speed and endurance equal to that of his horse, or even of any horse that could be bought. Instead, he demands the efficiency of an ordinary railroad train in these respects. There is no question but that if automobiles were constructed so that they could not exceed the maximum legal speed limit, or if they were driven at a rate and for a daily average distance not exceeding that of a good buggy horse by more than 50 per cent., the average expense for maintenance, on various items, would be materially less than that now reported, the original price would be less and the durability greater.

A PHYSICIAN.

RETROSPECTIVE

Tuberculin Immunization.—Trudeau (J. A. M. A.) has to a certain degree produced tuberculin immunity in animals. The difficulty with artificial immunity in general is that there is little evidence that one attack will protect from another. The part played by antitoxins, antibodies, agglutinins, bacteriolysins and opsonins is as yet imperfectly understood; but they are evidently all factors in the attempt to protect the body against bacterial infection. If tuberculin is used by the clinical method, it is observed that infinitesimal doses, methodically increased, result in a decided toxin immunity, which is shown by increased toleration to larger doses of toxin. The two most important factors in obtaining results are the length of time over which the treatment is extended and the dose of toxin the patient can be made to tolerate. Reparative changes are necessarily produced slowly, and antitoxic or antibacterial immunity is also slowly induced. Permanent benefit is not to be expected from treatment lasting only a few months, especially if a fraction of a milligram is the highest dose reached when the treatment is discontinued.

Cystic Disease of the Liver.—G. Conforti (Brit. Med. Jour., March 21, '08), examined the cystic liver and kidneys of a woman dying suddenly at 52. The kidneys were twice the normal size and were converted almost entirely into a collection of rounded cysts. The liver was of normal size and shape; the capsule of the left lobe was much thickened, whilst that of the right lobe was not. On section the right lobe was found congested; and a few small cysts were found in its portal spaces. The left lobe, however, was converted into a mass of cysts with connective tissue walls and gelatinous opalescent contents; between these cysts were strands of fibrous tissue, islands of liver substance and dilated ducts filled with bile. The excess of fibrous tissue was almost confined to the cystic part of the liver. The right lobe, which contained but few cysts, manifested under the microscope venous congestion; and round the bile ducts in most of the portal spaces an excess of fibrous tissue could be seen; the ducts were but little dilated. In most of the portal spaces a new formation of bile ducts could be seen. At the limits of the cystic portion of the liver these newly-formed bile ducts were more developed, and were invaded with young connective tissue sheaths, which also penetrated into the hepatic lobules. Small masses

of connective tissue, rich in vessels and cells, could also be found isolated in the middle of some of the hepatic lobules; the cysts in the left lobe were mostly lined with cubical or flattened epithelium and had fibrous walls. The bile ducts were generally dilated and surrounded by an excess of fibrous tissue; the epithelial lining had been shed from the most distended of these ducts. In the portal spaces the new formation of bile ducts was in active process, these epithelial tubules and their connective tissue sheaths passing deeply into the neighboring hepatic lobules, which were much congested and rich in fibrous tissue. In the most cystic parts there were a few atrophic liver cells surrounded by much fibrous tissue and by cysts, by thrombosed vessels, and by vessels showing chronic inflammatory changes. Conforti concludes that the cysts are derived from newly-formed bile passages, which become surrounded and stenosed by the proliferation of new connective tissue around them. He believes that a very mild and chronic irritation and consequent proliferation of the connective tissue round the bile ducts is the primal factor in the production of cystic disease of the liver.

Cancer, states Crile in his superb oration recently delivered in Chicago (J. A. M. A., June 6, '08), is widely distributed in Nature. It is slightly, if at all, communicable; it is not yet proved to be increasing or hereditary; it is rarely transplantable. Its biologic characteristic is the power of endless division of its cells. Death is the natural prognosis. There are frequently well-defined predisposing causes and pre-cancer states. The pre-cancer stage is the preventable or curable stage. It is vastly better to prevent a cancer than to cure it. No specific therapeutic measure exists; the knife is still the most reliable means of treatment. Incipient cancer is always local and is curable by complete excision. The chances of cure diminish in inverse geometric ratio to the lapse of time since its inception. There is evidence that a reliable blood test for cancer may be established; and there is a possibility of utilizing for cure the immunity principle through transfusion of blood. If there is in many cases a recognizable and curable pre-cancer stage, if the disease in its incipency is local and curable by excision, if the magnitude of the necessary operation increases in a direct geometric ratio and the chance for cure diminishes in a reverse geometric ratio with the lapse of time since inception, what is the duty of the profession, especially in its organized function and in its altruistic aim, towards the many thousands who now, without suspicion of the dreadful truth, are in the pre-cancer or early curable stage of cancer; what is our duty towards those who will in the future be stricken? It is to undertake a campaign of cancer education. The public is entitled to receive from the profession all the enlightenment required for self-preservation. It may be difficult to persuade a man to change his political tenet or his religious creed; sentiment may here bind him close. But there is no tie of sentiment between a man and his cancer; enlightenment ought to be easy and effective. A careful consideration of the progress made in cancer research and in treatment should banish despair, give new hope, and urge all to put forth still greater endeavor to conquer in the end.

Accuracy in Diagnosis, observes M. Richardson (Bost. Med. & Surg. Jour) means correct observation and logical deduction; it further means, with reference to histories and subjective symptoms, the emphasizing of some statements, the simple acceptance of some, the minimizing of some, and the absolute rejection of some. The accurate observer must separate the wheat from the chaff, the significant from the insignificant, the real from the imaginary; the symptoms dependent upon a minor lesion. In order that he may gauge its significance, give each symptom its proper weight. He must, having taken the history and learned the present illness concerning which he has been called, exercise his powers of observation through sight, touch, hearing and sometimes smell. With all the data thus collected, each sign being given its true weight, a logical deduction is then to be made. The whole process is an intellectual discipline of the highest sort. Through the control afforded by operation the diagnosis of surgical cases is given the interest which in medical cases is to be had only from an occasional autopsy; the surgeon is thus fortunate in being able to test the accuracy of his observations, the truth of his histories, the precision of his deductions. A source of error in diagnosis is that too great reliance is sometimes placed upon new and insufficiently proved methods of investigation, whilst too little is placed upon old and trusty ones; in football parlance, too much faith is put in trick play and too little in straight football. Every means that tends to scientific accuracy should be utilized to the full extent of its real worth; but the observer must be sure to realize its true value. Richardson could recall many cases of fatal error from permitting a single observation, based upon some new and not sufficiently established method of laboratory study, to outweigh bedside evidence that has stood the test of years, as, for example, when a diagnosis of non-peritonitis was made because there was no increase in the leucocyte count, when the patient had every major symptom of a fatal and advanced infection, and was indeed dying. "In my early experience with leucocytosis I have let pass the only favorable moment available for a successful appendectomy. I have seen a diagnosis of syphilis of the tongue based upon I know not what new and insufficiently proved observation, when the patient's very 'Good morning, Doctor,' showed an interference with the motions of the tongue which was almost pathognomonic of cancer." New methods of observation are not to be belittled. They should have their proper weight studied and determined. The diagnostician's real reliance, however, must be placed upon an intelligent selection of the significant facts of a truthful history, and upon the eye, the ear and especially the tactus eruditus. The importance of new methods should be accurately gauged by giving them more and more weight as experienced at the bedside and at the operating table justifies. Richardson emphasizes the educational value of error, "and our duty to ourselves and to our art of publishing our mistakes for the enrichment of medical literature, and through medical literature for the benefit of medical workers, throughout the world, and through them for the benefit of all mankind—the ultimate effort of all medical research."

Very true, our mistakes certainly ought to be published. They would be at least as instructive as a narrative of our successes. But we don't see much of this kind of literature; that is because there is a very fair proportion of human nature in doctors. Richardson proposes that this be done anonymously—not a bad plan, if it could be made to work.

The Bismuth Treatment of Sinuses.—E. S. Beck (J. A. M. A., March 14, '08), has since March, 1906, been diagnosing fistulous tracts, tuberculous sinuses and abscess cavities by means of radiography and treating them with bismuth paste injections. The formula for diagnosis and early treatment is bismuth subnitrate 30 grains to vaseline, 60 grains, to be mixed while boiling. The formula for late treatment is bismuth subnitrate 30 grains, white wax and paraffine each 5 grains and vaseline 60 grains, to be mixed while boiling. The soft paraffin, unlike hard paraffin, is absorbed in the tissues. The bismuth, being opaque to the X-Ray, gives a shadow that shows the shape and ramifications of the cavities. The cavity is first dried out, if possible, by packing with plain gauze, which is removed before the injection. The emulsion is sterilized before using, and is injected hot and liquid from a sterilized syringe. After one injection of the bismuth paste a psoas abscess fistula of nearly two years' standing closed up entirely and remained closed. The bismuth, which becomes radioactive on exposure to the X-Rays, promotes the formations of granulations where it comes in contact with the walls of the cavities, to increase this effect he has in some cases added strontium salicylate. Beck believes that a successful surgical operation on fistulous tracts depends on the exact knowledge of the extent and direction of the sinuses before the operation is undertaken. Radiographs taken after the fistulas have been injected with bismuth paste show the extent and direction of the fistulous tract. Skiagraphs of all fistulous tracts should be taken before an operation is decided upon. Fistulous tracts, tuberculous sinuses or abscess cavities, including empyemas, can be cured by injection of bismuth paste. Cavities or fistulas should be as clean and dry as possible before the injection of bismuth paste, which when mixed with wax or soft paraffin and injected in a liquid state, solidifies in the fistula and serves as a framework for new connective tissue. The paste is absorbed and the fistula obliterated. Bismuth paste injection will not heal out sinuses when sequestra are present; these must be removed before injection. The injections are painless and produce no unpleasant or dangerous symptom.

Oatmeal in Diabetes Mellitus.—J. B. Herrick (J. A. M. A.) describes the composition of the Von Noorden oatmeal diet in this disease, and the method of its use; 250 grains of oatmeal, from 250 to 300 grains of butter and 100 grains of some such vegetable albumin as roborat (or from six to eight eggs or the whites of eggs) are used. The oatmeal is cooked thoroughly in water for two hours, the butter and eggs are well stirred in when the cooking is nearly done, or the whites of the eggs are beaten up and stirred in later. Salt is added to suit the taste. This forms one day's rations for an adult, and may be given in from three to eight portions. Von Noorden advises feeding every two hours; he occasionally

allows a little clear coffee or a few sips of some wine to relieve the monotony. The oatmeal may be served as gruel or mush. Herrick has allowed it to be eaten as fried mush. This diet may, in severe diabetes, ward off threatening coma and establish a carbohydrate tolerance. It is of no value in the milder cases; and is not infallible in the severer ones. But in a certain number of the latter, in which emaciation, weakness, polyuria and glycosuria persist despite careful treatment, and when a study of the urinary content in acetone, diacetic and oxybutyric acids and ammonia shows acidosis with threatening coma, this Von Noorden diet, so Herrick assures us, has its greatest field of usefulness. It is essential to select and individualize the cases; in mild cases it may do harm. It should be maintained for a fortnight, and the return to the ordinary diabetic diet should be gradual. The main objection to it is its lack of appetizing qualities; but this can to some degree be met by care in preparing and administering the food. It is not explained why this diet produces results so contrary to what might be expected—why it does not increase the sugar and acetonuria; but the clinical facts show that it does not. Herrick found its good effects especially noticeable in the diabetes of the young, a form notoriously hard to manage. Herrick concludes that Von Noorden's claim for this oatmeal diet is worthy of confirmation. While the stomach will occasionally rebel; while the diet is not suited to all cases, being of the least avail in the milder forms; while it fails even in some of the severer cases; while no claim of a cure of diabetes can be made for it, this diet still remains a most valuable therapeutic agent for the warding off of impending coma in the severer types of diabetes, and for assisting in the establishment of a tolerance for carbohydrates. In the diabetes of children, if employed early, it seems to exert an unusually favorable influence.

Epidemics of Diphtheria among wood-pigeons are discussed by Dr. W. L. Sambon, of the London School of Tropical Medicine in the *Lancet*. The disease is not confined to the wild birds; the bacillus is equally distinctive to domesticated pigeons, which in turn infect game birds and domesticated fowls. The latter carry the disease into the cattle yards and stables of farms, victimizing the horses on the one hand and the cows on the other. Then the teamster and the milkman among the farm hands become infected, and distribute the germs with the milk sent to town. Diphtheria may, on occasion, be directly communicable from birds to man; and this through the medium of eggs. Characteristic diphtheritic membranes are to be found in the oviduct of fowls; and Sambon has found fragments of such infectious matter in the egg itself on his own breakfast table. Cooking, no doubt, destroys the germ; but those who partake of raw eggs and milk should see that the "white" of the egg is above suspicion. Diphtheria seems to be most prevalent along the east coast of England—the landing places of vast hordes of wood-pigeons in their annual migrations.

Delane, the former editor of the *London Times*, whose excellent biography by Dasent has been published by the Scribners, seems to have had an exquisite scent for news. He one day met Sir Richard

Quain at the Athenaeum. In the course of a few minutes' conversation the latter observed: "Lord Northbrook called on me to-day and asked me how a hot climate would be likely to suit his daughter, whom I have had under my charge. I said it would suit her very well indeed." Delane said nothing at the time, but the next day the first article in the *Times* astonished everybody, including the official world, by announcing that Lord Northbrook was going to India as Governor-General. A few hours afterward an acquaintance offered his congratulations to Lord Northbrook, who said they were premature, inasmuch as the appointment had only been settled that morning, and how the *Times* got hold of it the new Viceroy could not imagine. The truth, of course, is that Delane had, with the magnificent prescience to be found only in the journalistic make-up, put two and two together.

The Dangerous Hot Water Bottle.—The British Journal of Nursing relates an inquest on the body of an infant seven months old who died in a London infirmary from the effects of scalds received. When the mother went to visit her child she was told it was dead, and that the nurse had put a hot water bottle in the bed by which, the cork having been loosened, the child was scalded. The nurse stated she had not discovered the mistake until some hours after, when she found the child severely scalded, "and the skin off its right side." Such accidents are much too frequently recorded; and there are many more which do not find their way into the press. In a recent case a patient who was successfully operated on for appendicitis, but was burned by a hot water bottle, so that there was a raw wound on his leg nearly six inches in length. This necessitated an eight weeks' stay in the home, for which the unfortunate relatives had to pay full fees. The Journal considers that, in view of the multiplicity of these accidents, most of which are due to carelessness, the custom of a well-known training school of devoting a lecture in each course to the subject of hot water bottles is to be commended.

To Kill Fleas.—L. O. Howard recommends, in Science, that a soup plate be filled with soapsuds, in the centre of which is placed a glass of water with a scum of kerosene on top; place the soup plate on the floor in an infested room, and set fire to the kerosene at night. Fleas will be attracted to the flame and will jump into the soapsuds. Houses may be rendered immune by dissolving alum in the white-wash or kalsomine applied to the interior walls, putting sheets of thick paper that have been dipped in an alum solution under the floor matting and scattering pulverized alum in all crevices where insects might lodge or breed. Powdered alum may be sprinkled upon carpets, already laid, and then brushed or swept into their meshes with no injury to the carpet, and with the certainty to many insects, including both moths and fleas. Sheets that have been soaked in alum water and then dried may profitably enclose those that are spread nearest to the sleeper.

The chief objection to skyscrapers is a sanitary one; they shut out light and air from adjoining property; and the conviction is steadily growing that the question should be made one of careful legislative control. Mr. Ernest Flaggs has made an im-

portant contribution to this really vital subject in the American Architect, summing up his proposal for control and restriction under four propositions: He would limit three-quarters of the area of every plot to a building height not to exceed once and a half the width of the street on which it faces, with a maximum height of 100 feet; he would have no limit of height for the remaining quarter of the plot, provided that no building or part of a building should be carried above the limit mentioned within a distance of the street facade equal to the distance of curb from the building line; he would allow of the purchase and sale between adjoining owners of the right to build high within the limit stated; he would require that all sides of any structure carried above the limit of height should be treated architecturally, and that no wood whatever should be used in the construction of the entire building or its equipment.

X-rays By Express.—The Medical Standard relates that in Europe, as well as among us, the public knowledge of these rays is not always precise. A Berlin specialist received a letter to the effect that the writer had had a bullet in his thorax for eleven years. "I am too busy to come to Berlin, but hope you will come down here with your rays, as my case should be worth your while. If you cannot come, send a packet of rays with instructions as to use, etc., and I will see if I cannot manage to work them myself." The doctor replied: "I am sorry that my engagements prevent my coming to see you, and that I am out of rays just now. But if you cannot come to Berlin yourself, send me your thorax by express, and I will do the best I can with it."

In Stricture of the Eustachean Tube the fossa of Rosenmüller is in almost all adult subjects, more or less obstructed, sometimes by lymphoid, at other times by fibroid tissues. Young subjects have only lymphoid tissue, adults have less than the young, and the aged no lymphoid tissue at all; evidently then this tissue atrophies with time and leaves only fibrous adhesions. The lymphoid obstructions in the fossa originate from hypertrophy of the lymphoid lining, which either obliterates the fossa or bridges it over. The fossa is thus either filled in from the fundus or by adhesions between the anterior and posterior surfaces across an abnormally narrow fossa. The mass of lymphoid tissue here placed tends to imperfect potency of the tube, thus preventing normal drainage and ventilation of the middle ear; and by the adhesions in the fossae interferes with the physiological action through imperfect movements of the tubal cartilage.

Cerebral Abscess, in fully 37 per cent. of all cases, results directly from an extension of an infective process from the middle ear; and of these 37 per cent. four-fifths are caused by middle ear suppuration. It is therefore most important to treat this latter condition and thus avoid involvement of structures adjacent to the middle ear. J. F. McKernon (The Laryngoscope, Jan., '08) warns the attending physician to examine well the middle ear. Something more may be necessary than to give instructions for the ear to be syringed out by some antiseptic solution. Drainage may eventually become obstructed; and the retained pus may involve the mastoid bone or one or more of the intracranial strictures, thereby endangering the patient's life.

MISCELLANY

"All other medical studies are the foundation; therapeutics is the superstructure."—Fothergill.

Chloral Hydrate may be administered by rectum. From 5ss to 3i is mixed with the yolk of one egg and half a pint of milk and injected by means of a rubber syringe.

To destroy flies, Delamarre, of Paris, advises that a solution of formal in water, one part to nine be put on plates; twenty-four hours later not only the plates but a considerable space around them will be covered with flies and mosquitoes which have been attracted by the mixture and its emanations. The solution should be changed every day.

Nasal Obstruction.—Before inducing anesthesia we should determine (*Internat. Jour. Surg.*) if the patient can breathe freely through his nostrils. This will prove more or less of a barrier to efficient anesthesia; and it were then admissible to let the inhalation be by the mouth to facilitate which a prop should be placed between the teeth.

Whooping Cough, states H. A. Macemen (*Brit. Med. Jour.*), is undoubtedly an infectious disease; the specific virus is contained in the sputum or in the vomited matter or both; infection may take place either during the process of swallowing or by ingestion of the infective agent; cats are susceptible to pertussis and may, therefore, disseminate the disease.

"Thinking is like sugar—good for the young, but gouty for the old," observes a doctor in Miss Willcock's book *A Man of Genius*. "Civilization, at least in the present form, demands that quite half the people who carry it on should have no imagination. I tell you what it is, David, you've got a temperature of 104 degrees Tolstoi—and I can't operate. If you'd only caught something in it instead of something in ism, I might."

Blood Pressure in Eclampsia.—G. S. C. Badger (*Boston Med. & Surg. Jour.*, May 7, '08) finds the blood pressure in this grave condition to be high, and of diagnostic and prognostic importance; and it may remain high despite improvement in subjective symptoms and increase in the quantity of urine. Continued high blood pressure is a dangerous symptom, indicating that labor should be induced. Otherwise complete recovery is unlikely.

Poster War on Tuberculosis.—The Committee in the Prevention of Tuberculosis of the Charity Organization Society are having distributed among Italian families some 10,000 colored posters with a view to impressing upon tenement dwellers that consumption is preventable by sunlight, fresh air, proper food and temperate habits. The poster shows a Venetian scene copied in bright colors from a painting by H. P. Smith. The lithograph is bordered with good advice in large type. The same novel idea will later be carried out among other nationalities.

Some Visible Signs of Visceral Disease are stated; J. Salloway (*Brit. Med. Jour.*, March 21, '08). There are certain cutaneous eruptions due to disorders of the alimentary tract, such as erythema exudativum occurring in diseases of the liver with portal obstruction and other similar conditions. The dilatation of

superficial vessels is an indication of liver diseases; dilatation along the course of the superficial lymphatic vessels tend to indicate some internal disease. Certain forms of xanthoma signify malignant hepatic disease; and other abnormalities of pigmentation are evidence of internal lesions.

The question of water drinking, an exchange wisely intimates, is one that may best be solved by individual experience. Some would have it that water helps elimination, and advise hot water to be drunk on rising, before meals and at bedtime. No doubt excretion is thus furthered; and equally undoubtedly the bodily weight is increased and not diminished by this practice. On the whole one should drink water in moderation; not much at meals (in order that the digestive juices be not diluted to an ineffective degree) but pretty liberally between meals, in obedience to a wholesome, natural and discreet thirst.

Dr. Osler, who is now regius professor of medicine at Oxford University, has consented to contest for the lord rectorship of the university of Edinburgh in November as a non-party candidate. He is the first physician ever nominated for the office. His candidature is warmly supported by 1,400 medical students; his opponents will be Minister Churchill and George Wyndham. Dr. Osler may still be addressed as was a former lord rector of that institution in a letter from an East Indian admirer whose command of the English language was a trifle shaky, as "Lord ———, Director of the Universe, Edinburgh, Scotland."

The bacillus pestis lives and breeds in the blood of the rat. The latter harbors fleas which suck his blood and with it the bacilli. Each flea thus infected is veritably a little dynamite bomb, passing as it does with the rat into habitations, wherein, from floor or chair or bed it leaps upon human beings. It is not by the flea's bite (as in the case of yellow fever by *stegomyia*) that the bacillus is injected. The flea ejects blood upon the skin from his digestive tract; the bacilli are in his excreta and the peril lies in going unbathed. For thus the plague bacilli will penetrate the skin and tissues and thus infect the individual. In Japan and the United States the spread of the bubonic plague is slow; whilst in India and China where people bathe seldom, if at all, the disease is endemic.

Arteriosclerosis seems to be the central element in the clinical and anatomical manifestations of many cases of mental disorder. Some of these cases described symptomatologically as melancholia, hyperchondriasis, neurasthenia and the like are, in the opinion of C. M. Campbell (*Am. Jour. Insanity*, Jan., '08) better grouped on etiological grounds as cases of arteriosclerotic brain affections. While the hardening of the arteries is an important factor, those which led to the grouping of other symptoms are not, however, to be neglected. Especially should we study the depressions of advanced life. The term arteriosclerotic dementia is justifiable; but the relation of certain mental symptoms to similar ones in the presenile and senile psychoses must not be lost sight of. In certain cases of epilepsy with onset in late life the convulsions and general symptomatology are closely related to arteriosclerosis.

INOSCULATION CIRCLES.

Blood Cures Disease.

BY BYRON ROBINSON, D.S.M.D., CHICAGO, ILL.

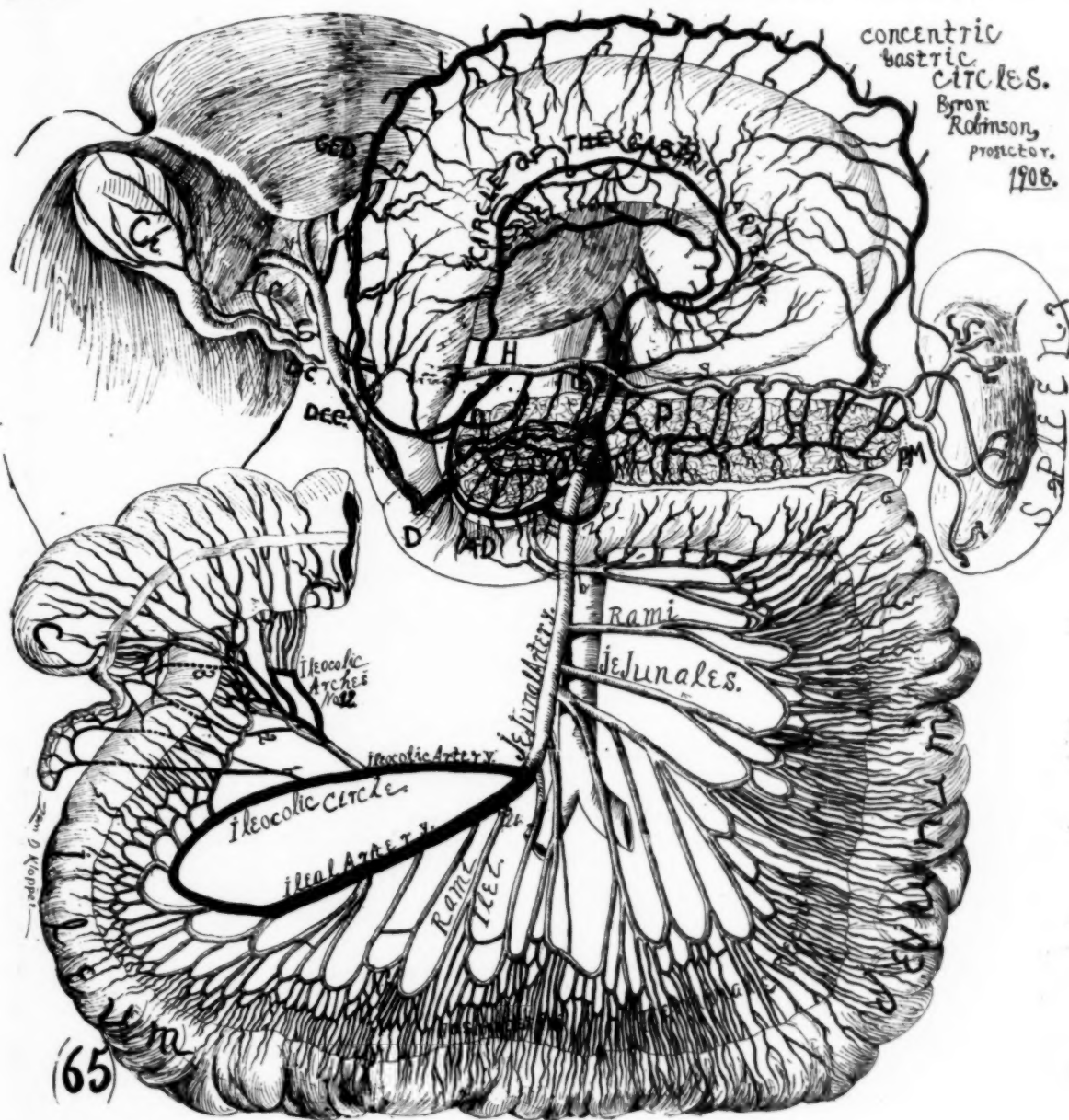
Professor of Gynecology and Diseases of the Abdominal Viscera
in the Chicago College of Medicine and Surgery
in affiliation with Valparaiso University.

AN "inosculation circle" consists anatomically of: (a), a vascular arc; (b), a peripheral viscus; (c), automatic specialized, peripheral ganglia.

is by stimulation of its automatic, specialized, peripheral ganglia.

Stimulation of the automatic, specialized, peripheral ganglia or any segment of the inosculating circle stimulated all the ganglia on the circle which dilates the caliber of all the vessels composing the circle—flooding the peripheral organ with blood.

The inosculating circle is the apparatus by which localized hyperaemia is secured, for local, specialized,



The object of the "inosculation circle" is to engorge its peripheral viscus and to transport blood from one viscus to another.

The means of functioning the inosculating circle

increase of common visceral function (sensation, secretion, peristalsis, absorption), and if it be the genital vascular circle, the special function of ovulation, menstruation and gestation is added.

"major mesocolic circles," in short the arcus gastricus intestinalis, which is solidly and compactly anastomosed, are Auerbach's and Bilioth-Meissner's.

The means of stimulating the automatic, specialized, peripheral ganglia on the "gastro-intestinal circles" is by ample fluid and food administered at regular intervals—also heat, electricity, massage, exercise, environments, etc., etc.

Fresh air in the lungs (especially cold) induces hyperaemia of the "pulmonary circle"—which not only acts as a prophylactic, against disease, but cures disease, e. g., tuberculosis.

The automatic, specialized, peripheral ganglia on the "pulmonary circle" are the pulmonary ganglia. The means of stimulating the automatic, specialized, peripheral, pulmonary ganglia are by fresh air, (especially by cold and exercise).

Ample fluids and diuretics induce local and general hyperaemia of the tractus urinarius, increasing the urethral function (sensation, secretion, peristalsis, absorption), increases visceral elimination.

Ample visceral drainage increases volume and power of the urethral current as well as attenuates

A calculus in the ureter localizes ureteral hyperaemia, enables us to detect it from hyperaemia of the vesical ureteral orifice.

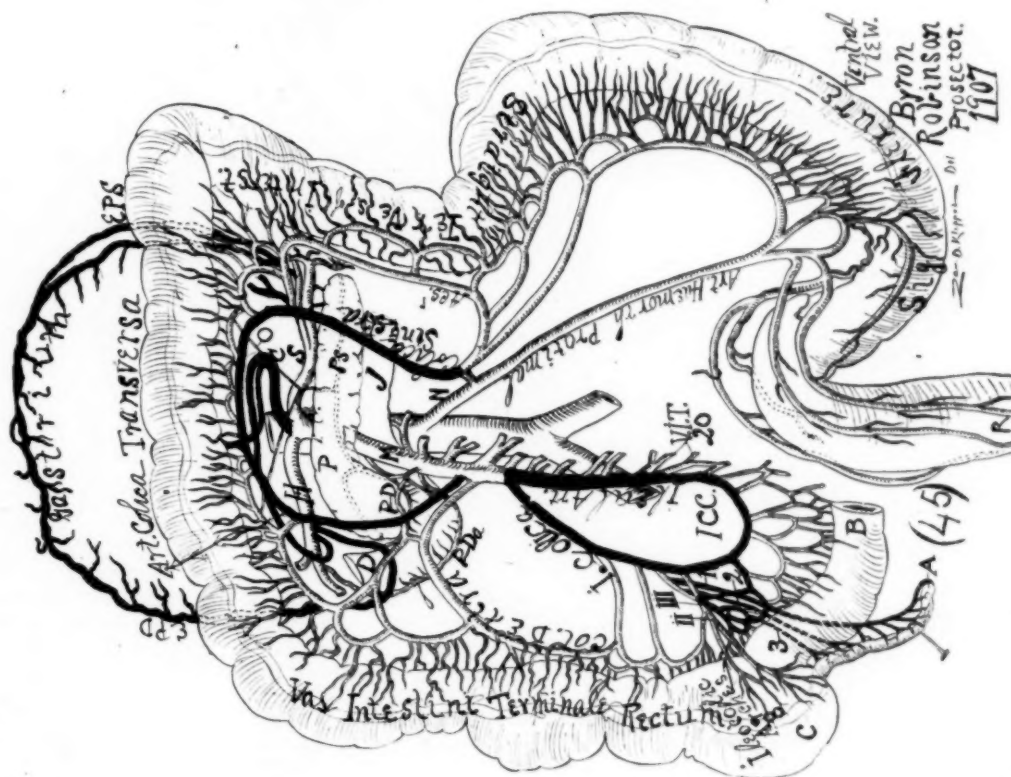
SUMMATION OF VIEWS REGARDING INOSCULATION CIRCLES.

An "inosculature circle" consists anatomically of: (a), vascular arc; (b), peripheral viscus; (c), automatic, specialized, peripheral ganglia. The crux, the rock and base of circulation is the "inosculature circle."

The "inosculature circle" is related to important viscera, e. g., "circle of Willis" (cerebrum), "utero-ovarian" (genitals), "concentric gastric circles" (gastrum), "ileocolic circle" (ileocolic angle), "enterocolic circle" (enteron and colon), "gastro-enteronic circle" (gastrum and enteron).

Physiologically the function of an "inosculature circle" is to produce hyperaemia in its peripheral viscus and also to transport blood volume from one viscus to another.

The means of functioning the "inosculature circle" is by stimulating its automatic, specialized, peripheral ganglia which dilate its vessels and engorge its peripheral viscus. The volume of blood occupy-



urinal salts (deposits), hence visceral drainage is not only a prophylactic against the formation of ureteral calculus, but it cures it, floating, dissolving transporting it towards the bladder.

Three times recently have I forced ureteral calculus through the ureter by maximum visceral drainage—by administering ample fluids at regular intervals—4 quarts daily.

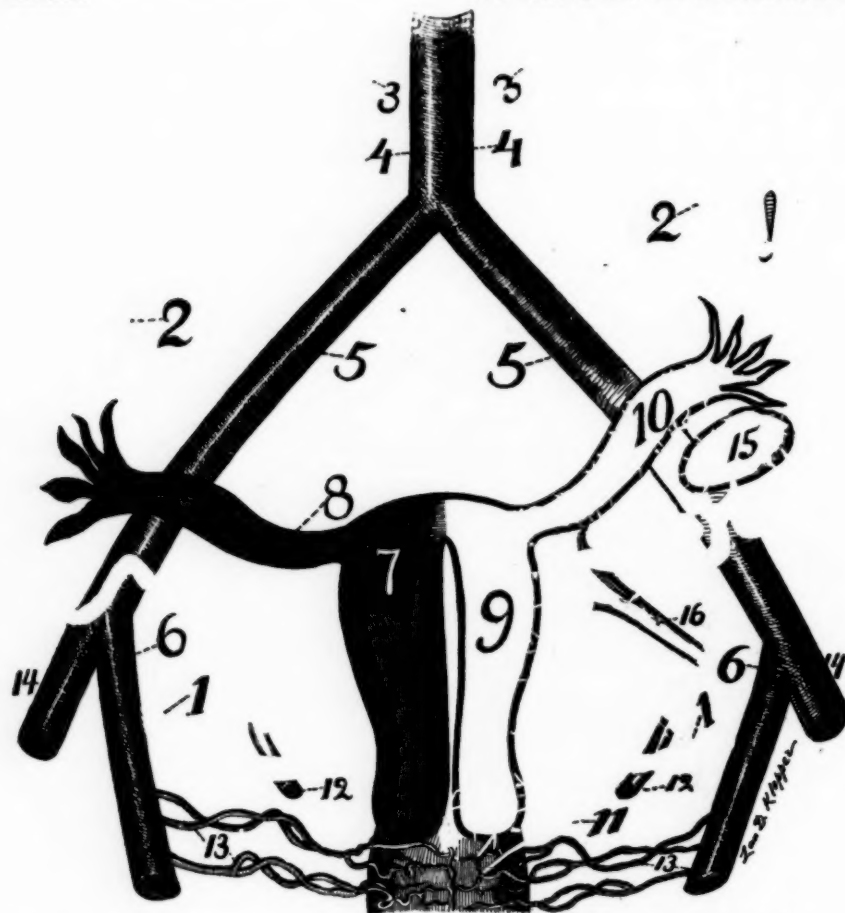
ing the "inosculature circle" may be controlled by stimulation of its automatic peripheral ganglia.

The rushing current of blood to diseased parts, to infected areas is sufficient evidence that blood cures and is a prophylactic of disease and the ability of the physician to control the blood volume in the "inosculature circle" enables him to imitate nature. The "inosculature circle" possesses unlimited utility

in medicine and presents one of the most hopeful therapeutic fields. The chief rational therapeutics for the "inosculature circle" is "Visceral drainage" (the administration of ample fluids at regular intervals) which produces maximum, visceral hyperaemia and maximum, visceral elimination. Finally: Blood cures disease.

fessor in the University of Cambridge. The circle of Willis is located at the cerebral base and though from neglect of investigation it has presented slight influence to therapeutics it has maintained undisputed, anatomic distinction for almost two and a half centuries.

We believe that the inosculature circle is a thera-



A cell lives in water.

A cell functionates in a fluid medium.

The apparatus for executing visceral hyperaemia is the "inosculature circle."

The object of an "inosculature circle" is to engorge its peripheral viscus and transport blood volume from one viscus to another.

A maximum blood volume occupying an "inosculature circle" exacerbates common visceral function (sensation, absorption, secretion, peristalsis). The solidity and compactness of anastomosis of the arteries of the intestinal tract enables it to concentrate circulation in any local segment requiring increased, localized function (sensation, secretion, peristalsis, absorption).

The inosculating circle is the direction of least resistance for blood current.

The text book of anatomy teaches the student a single "inosculating circle", viz: that of Thomas Willis (1622-1665), the English anatomist who was pro-

peutic agent of vast practical utility.

VISCERAL DRAINAGE stimulates the automatic, specialized, peripheral ganglia of every "inosculature circle" by completely occupying the vesicular arc or tract with blood, distending it with fluid, so that maximum, normal, common function (sensation, absorption, peristalsis secretion) may be capable of producing maximum normal visceral elimination. For a quarter of a century I have practiced what I term "Visceral Drainage" (with regulation of diet) on the following plan of administering definite quantities of fluid (with urinary and gastro-intestinal stimulants) 6 times daily, e. g., before meals and between meals.

The general directions for "visceral drainage" are:

Before meals place together on the tongue $\frac{1}{4}$ white * tablet and $\frac{1}{2}$ brown * tablet and drink a glass full (8 ounces) of hot water. Between meals (that is 10 A. M., 3 P. M. and 9 P. M.) place on the tongue

*The Utero-Ovarian Artery—The Circle of Byron Robinson.
—Dr. Wm. E. Holland, Am. Jr. of Surg. & Gyn., Dec., 1900.

$\frac{1}{4}$ white tablet with $\frac{1}{2}$ brown tablet and drink a glass (8 ounces) of fluid.

The composition of the (white tablet) is sodium chloride, grains 12.

The composition of the (brown tablet) is the following:

Aloes socatrine, 1-3 gr.

Ext. cascara sagrada, 1-40 gr.

Sodium bicarbonate, 1 gr.

Potassium bicarbonate, $\frac{1}{2}$ gr.

Magnesium sulphate, 2 grs.

THE INOSCULATION CIRCLE.

Fig. 65. This figure illustrating the inosculature circle of the tractus intestinalis, viz.: concentric gastric circles, duodenal circle, pancreatic circle, ileocolic circle, ileocolic arches (circle of the gastric artery, circle of the pancreatic artery). These inosculature circles may be utilized in therapeutics.



THE INOSCULATION CIRCLE.

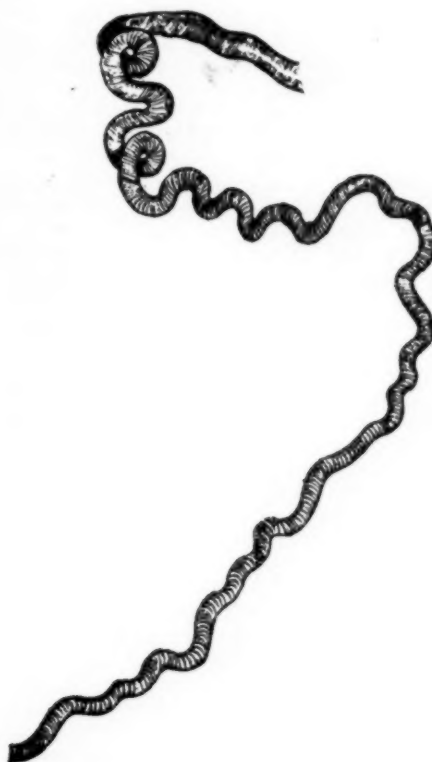
Fig. 45. This figure illustrates inosculature circles in the tractus intestinalis, viz.: concentric gastric circles, duodenal circle, ileocolic circle, ileocolic arches, enterocolic circle (all in black). Also proximal and distal bilateral major mesocolic circles (not in black). The congestion of these inosculature circles produces hyperaemia in their respective viscera and consequent maximum visceral drainage.

THE INOSCULATION CIRCLE.

Fig. 58. This figure illustrates inosculature circles of the tractus intestinalis. The inosculature circle enables the therapist to hyperaemize, congest local segments in the gastro-duodenal tract, to congest the peripheral viscus of the inosculature circle, and cure disease by flooding localities with blood.

THE INOSCULATION CIRCLE OF THE GENITAL TRACT.

Fig. 4. 1, 2, 3, utero-ovarian artery—the spiral segment of the genito-vascular circle; 5, the common and 6 the internal iliac—the straight segment of the genital vascular circle. The utero-ovarian artery is a typical "inosculature circle" composed anatomically of—(a), a vascular arc; (b), automatic, specialized peripheral ganglia; (c), a peripheral viscus. Physiologically its function is to congest its peripheral viscus (genitals).



The (genital) "inosculature circle" is functionated by stimulating its peripheral ganglia (automatic menstrual ganglia), ganglion cervicis (pelvic brain) which dilate its vessels (utero-ovarian artery) and hyperaemize its peripheral viscus (genitals).

The condition or means of stimulating the genital "inosculature circle" are—menstruation, copulation, gestation, hot douche, massage, tampon, electricity, and blood cures disease.

GENEALOGY AS A GUIDE TO HEREDITY.

BY A. L. BENEDICT, A.M., M.D., BUFFALO.

HERE is a popular impression that genealogy is an amusement of superannuated men and women, of no earthly value and indulged in as a manifestation of a vicarious vanity, in which consolation for a worthless individual career is obtained from contemplation of illustrious ancestors. In most circles, ridicule of genealogy is as certain of applause as the speech of the hero of the melodrama when he expresses his affection for his mother or his intention to have a woman's honor. It must also be frankly admitted that a great deal of the genealogic study of the last twenty years has been actuated by the desire to secure admission to some organization of sons or daughters of something or other and that certain of these organizations have manifested a disgusting degree of snobbishness and have entirely lost sight of the military or civil service which they commemorate unless we ascribe their petty personal quarrels to a manifestation of heredity of fighting blood.

On the other hand, it must be recognized that certain other organizations have manifested a broad patriotic spirit in preserving historic buildings and sites, in stimulating Americanism in the young, and that all have contributed, in one way or another, to the accumulation of historic data, for the most part of minor importance, yet not without value to the present generation and of incalculable value to students of generations to come.

The writer wishes, however, to urge upon the medical profession, the importance of genealogy, purely from the medical standpoint. There is no doubt but that heredity is of great importance in regard to many diseases and that negative evidence is equally important, in so far as it will dispel forebodings of evil or enable us to disregard family history.

Most of what is written regarding heredity—not excepting the present article—is vague and unsatisfactory because it is not based on definite clinical knowledge. Certain biologic studies, even with plants, afford a good foundation of observed fact with regard to the transmission of racial characteristics throughout a number of generations, and to the proportion of instances in which departures from parental or ancestral types or departures with subsequent atavistic returns, may be expected. Such studies have precisely the same relative value as experiments and observation upon lower animals and plants with regard to metabolism, invasion by parasites, actions of drugs and poisons, etc. We know that inferences drawn from such studies can not be safely applied to human beings without direct clinical experience with human beings themselves.

Thus, any notions that we have regarding the heredity of disease, of disease tendencies, of physical conformation, complexion, etc., of probable longevity, of mental attributes are scientifically worthless until established by actual recorded observations, extending over a number of generations. Such accumulation of data necessarily implies genealogic study, not of an occasional and isolated family, but of the rank and file of the population, and it implies a careful, impartial recording of facts, relating to individuals, far exceeding the memoranda of dates and places and the eulogies of published genealogies.

Such genealogic study cannot, in the nature of things, bear immediate fruit. It is only recently that medicine has approached the standards of an exact science. Records bearing upon stature, complexion, longevity, general health, etc., may occasionally be available for several generations and it is often possible to translate into terms of modern medical science, the quaint records of early operations, sicknesses and necropsies. But, in general, a living person cannot go farther back than his grandparents in accumulating accurate medical and physical histories, and it will require at least a hundred years—three generations—before such records, tediously assembled and added to, can be of much service. Thus, such study must be regarded as a contribution from the present to the future. "Who plants pears, plants for his heirs."

A point in genealogic study, commonly overlooked, is that an ancestor in a female line is probably just as important as one in the male line, so far as any practical value of heredity is concerned. Indeed, there is some reason to believe that, as a rule subject to many exceptions, there is an alternating tendency for each parent to transmit predominating characteristics to a child of the opposite sex. If this theory is true, genealogy, if studied for only one ancestor in each generation, should run from boy to mother, to maternal grandfather, to the latter's mother and so on, in a zigzag line. But, a far more rational way is to make out a complete chart in all lines.

If it were seriously, announced to any one that he had two parents, and four grandparents, the person addressed would probably consider his informant a fool, but very few persons remember that they have eight great grandparents and that their ancestors increase by geometric ratio, by two. The generations and number of ancestors are very simply and conveniently designated, in accordance with this mathematical rule. For instance, starting with any individual, we may designate him as 2^0 . That is to say, he is separated from himself by no generations and two to the nought power equals one, that is to say, there is one of him. His parents are similarly designated by 2^1 , implying that there are two of them and that they are one generation removed. Grandparents are designated by 2^2 , great grandparents by 2^3 , and, in general, the number of greats preceding the term grandparents, is 2 less than the exponent. As a rough rule, we may say that there are about three generations to a century. Hence, going back to the generation which settled this country, we shall strike about the 2^9 generation for young adults. Excepting in some few prominent lines, this is about as far as any American can hope to reach.

It may not be without interest to note just what the exponent signifies. It means that the word great occurs 9, 2 or 7 times before the word grandparent and that there is heredity from 512 ancestors. This means very much more than is suggested by the ordinary form of family tree with nine names preceding that of the individual descendant. Most important of all, it means that the Smith or Jones traits are almost homeopathically diluted, so that the ordinary conception of heredity in a surname line is entirely vitiated. Parenthetically, it may be said that this teaches us a lesson in race solidarity, which may

not be without its patriotic inspiration, in that it signifies an equal heredity and kinship with 512 different surnames.

This same fact gives us a very important hint in a negative way about heredity of disease, family traits and mental and moral characteristics. Unless we assume that the male element is solely active in heredity and that the mother is simply so much soil in which the foetus grows, it wipes out of consideration a lot of nonsense about the Smith cancer, the Jones tuberculosis and the Robinson gout, etc. This is certainly a very practical comfort to many persons and a strictly medical bit of knowledge.

But the statement as to the number of ancestors in this not very remote, ninth generation, requires a qualification, implied in the very statement of numbers. The fact—subject to this qualification—that each unit in the present population is descended from 512 ancestors, may be graphically represented by a row of inverted triangles, thus:



But, meantime, a stationary, normal population, with room to grow, or in other words with enough food to eat, ought to double about every third generation. Hence, the population corresponding to these triangles, must be represented by a trapezoid or truncated triangle thus:



Now place the triangles in the trapezoid, and it becomes at once apparent that there must be overlapping in the antecedent generations. In other words, while any one individual of the present generation may have 512 different ancestors in the ninth generation back, any average set of individuals must have more or less duplication of ancestors by intermarriage of relatives. Obviously, too, our kinship with our fellow countrymen, aside from comparatively recent immigrants, is much less remote than Adam.

It may be of interest to know the degree to which duplication of ancestors may occur, and, for lack of other data, I am compelled to resort to personal statistics. My father and mother, for example, supposed themselves to be entirely unrelated and their various families had been separated for over a hundred years by distances which were in those days, almost absolute barriers to intermarriage. Yet it has recently been learned that there were at least three distinct coincidences of ancestors—six common strains of blood—in the eighth generation back. In my own ninth generation, 60 of the 512 theoretic ancestors must be erased on account of duplication and as only about half of the strains are at present definitely known, it is possible that there is a duplication or multiplication amounting to almost 25 per cent. In three different cases, pairs of ancestors are each repeated three times.

This last point is important as an argument against

the study of heredity in a narrow, surname line. Unless, as has been stated, we assume that the surname has some predominating influence in determining heredity, a hypothesis which is not only improbable but probably exactly opposite to fact, it means that I am just three times as much a member of any of these three families as of what in the narrow sense is my own, so far as any possible practical influence of heredity is concerned.

One of grandparents, owing to various intermarriages, had at least 42 and, if tradition is correct, 58 duplicated ancestors in the generation in which he should theoretically have had 128. He lived to be 81, his father 85, his mother 64, and there was no evidence of lack of fecundity or premature death in his children and other antecedents than those mentioned. He certainly, his father probably, and several of his ancestors married first cousins, not to mention intermarriage of second cousins.

The increase of population is not only a matter of great sociologic interest but one that bears directly on the diffusion of heredity. It may be a surprise to certain Rooseveltians that the maximum increase, under any conditions of life possible in the past or at present, is in geometric ratio by 3, for successive generations. Of course, greater fecundity may occur exceptionally but, as a general rule, a dozen children will be the limit for each couple and of this dozen about five will die before reaching their majority and enough more during early adult life, to warrant the statement that the average couple can not beget more than three times their own number, who will, in turn, procreate at a similar rate. In actual experience, no community could keep up this rate of increase, even if we omitted all consideration of eventful overcrowding, and consequent starvation or debility. Occasional wars, various bars to matrimony and other sociologic factors would, by themselves, reduce the actual increase considerably below the theoretic maximum and we must not forget that pregnancy has a pretty definite and practically unpreventable mortality of 1 per cent., so that, in a general matrimonial fertility of 12 children to a couple, nearly an eighth of the mothers would die. Even a doubling of the population from one generation to the next, would be an exceptionally favorable (?) result.

The following actual genealogic table is of interest in showing that the theoretic maximum may be maintained for a considerable period. In it, males alone are counted, and only such males as actually became heads of families. There are known to be certain omissions but these have not been estimated as certain missing links render it impossible to assign each individual to the proper generation, though the connection with the family is indubitable. So, too, there are probably a few unknown omissions, though certainly very few. At any rate, the fertility is understood.

1st to 3d generations in England.		Emigrant to America	
1st generation	1 male	Calculated on 1:3 ratio,	3 males.
2d generation	1 male.	" " " "	9 "
3d generation	1 male.	" " " "	27 "
4th generation	1 male.	" " " "	81 "
5th generation	5 males.	" " " "	243 "
6th generation	14 males.		
7th generation	54 males.		
8th generation	87 males.		
9th generation	243 males.		

The statistics below the ninth generation which was born approximately about the time of the Revolution are not complete. For example only 195 are scheduled for the tenth generation and while some falling off must be ascribed to the absence from home and death of the Revolutionary generations, this could not be an important factor for this war swept in waves over the colonies and the great majority of the Continental soldiers were engaged only in one or two brief campaigns near home. Neither could modern methods of limiting procreation have been in vogue at that time and the custom of exceedingly early marriages reached its maximum at about this time. Contrary to the general belief, it was not a general custom during the early colonial period. The destruction of family and town records and the political belief that one man was as good as another and that heredity counted for nothing, are the two main factors in the apparent falling off in numbers of the tenth generation.

Young men, at present at the beginning of adult life, would represent the average of the twelfth generation which should number 5661 at the same ratio of increase. Various rough estimates, as from ratio of names in city directories, subscribers to genealogies, etc., indicate that there are approximately 10,000 living males, about half of whom would be representative of the 12th generation, so that there has not, as yet, been any marked tendency toward decadence of the family.

Note that the expression "representative of the 12th generation is used." If we take any one group of brothers and sisters, during young adult life, there will ordinarily be living at the same time, their parents and part of their children. Extending the consideration to first, fourth and other more remote cousins of the same generation, the living representatives of any family will consist of about half of the generation whose average is about the prime of life and about half of the antecedent and subsequent generations. But if, for four or five generations, we compare older children of older children with younger children of younger children, we shall ordinarily find at least four and probably six successive generations of the general family living at the same time.

For example, of the present illustrative family, it would be safe to say that none of the seventh generation are now living, that it would require a triple succession of sons born when their fathers were 55 or more to render it possible that any of the eighth generation should now be alive at an advanced age but that the ninth to the thirteenth and possibly the fourteenth generation are represented in the living family. But, with statistically unimportant exceptions, the living family represents the tenth, eleventh and twelfth generations, as old, middle aged and young men and women.

One occasionally sees curious examples of the lengthening or shortening of generations. For instance, an elderly gentleman, perhaps recently but only recently deceased, had a brother in the Revolution and the pension office still has on its rolls a few daughters of revolutionary soldiers. As a college boy, I had a young friend who had several grand nephews and nieces. In my general practice, I delivered the grandson of a woman aged 32 and had a

family in which five generations, from great great grandmother to great great granddaughter were living, the succession being broken by the premature death of the middle member, who was, respectively grandmother and granddaughter to the extremes.

Yet, on the average, all of the children of one generation are usually born within ten or twelve years and, perhaps on account of the greater responsibility of older sons in helping to provide for the paternal family, and, therefore to defer marriage, there is a pretty distinct tendency for the descendants to keep closely together chronologically.

For instance, in the illustrative family, following oldest son to oldest son, successively, the senior member of the eighth American or 11th total generation was born in 1802 while, following youngest son to youngest son, successively, the junior member of this generation was born in 1852. The words senior and junior obviously do not necessarily—nor actually—represent the oldest and youngest members of this generation. As a general rule, we may allow an age-range of ten years for each generation; that is to say, numbering the propositus 1, the third generation (grandchildren) will have an age-range of 20 years; the fourth, 30, and so on. If anything, the age-range will rather fail to reach rather than exceed these bounds, and nine years per generation will be more nearly right than ten.

An important practical problem in human heredity is whether the offspring tends to blend the attributes of the parents or whether the principle of unit-characters holds. For instance, white and negro intermarriage, produces a blended color of the skin which is pretty regularly deepened or lightened by subsequent intermarriage of mulatto with negro or white, just as we might produce definite shades by mixing in definite halves, quarters, etc., brown and white sugar. But, in coupling grey and white mice, the offspring is either grey or white, not brindled, but whether grey or white, the offspring in turn may produce either grey or white offspring and so on. Even in this case, the division of heredity by two is seen in the fact that, any series large enough to eliminate the factor of chance, will show three-quarters grey and one-quarter white descendants (Mendel's law), one-quarter being produced by grey spermatozoon plus grey ovum, one-quarter by grey spermatozoon plus white ovum, one-quarter by the reverse, and one-quarter by white spermatozoon plus white ovum. In the two middle quarters, both grey and white heredity is present, but the grey color overmasters the white tendency so that the mice appear grey but retain the proportionate tendency to reproduce white descendants.

This phenomenon of the overmastering of a characteristic which remains latent has been proved to exist for a number of characteristics and in a number of hybrids, both among plants and animals.

While the intermarriage of human beings of different races according to the five main types always produces blends and not instances of the law of chance in producing superficially pure types of one or the other race, we do see occasional amusing or tragic examples of reversion to atavistic types, as for instance, when a white man marries a woman apparently purely white but with an eighth of negro,

which appears in the offspring, not as an inappreciable sixteenth but as a very conspicuous negro taint.

It is scarcely necessary to mention that the racial subdivisions, as Aryan and Semitic of the white, Germanic and Gallic of the Aryan, German and Dutch of the Germanic, present less and less marked characteristics and that a family in the surname sense cannot possibly represent a special racial variety, although one may be produced by the inbreeding of families in the same locality.

It is an important but an open question whether these sub and subracial characteristics are transmitted according to the law of blending or according to that of units which may be dominated into latency but which tend to reappear in apparently pure form. Equally important and equally undecided is the question whether inbreeding, short of incest or perhaps short of known near relationship but within the national subrace, should be encouraged or not, or whether these various subracial and relational characteristics are so minor and so amenable to the influence of environment, that they have no practical, appreciable bearing.

Owing to the originally mixed settlement of this country and the recent enormous influx of immigrants, these problems assume an importance for Americans—using the word merely to indicate residents—greater than for any of the European countries.

They are by no means solved by experience since, as yet, while there has been considerable mixture of English, Scotch (including the Scotch-Irish, so-called, who are pure Scotch) and Dutch colonial blood in the colonial descendants, there has been comparatively little intermarriage between these and the recent immigrants nor between the latter across national lines.

A further factor, independent of nationality, is that emigration appeals, on the whole, to the less substantial part of a population and the general average of our immigrants has become worse and worse as emigration has been rendered cheaper and easier. At present, the prospective immigrant requires about double the financial value of a steer destined for slaughter and practically no more intelligence than the steer that is to be shipped, except in expressing to a shipping agent his desire to reach a destination, vaguely described. Of course, it would be unjust to say, as some have, that immigrants are merely cattle but a large proportion at present exercise no intelligent initiative in leaving for America and have no conception whatever of the responsibilities which they are supposed to incur. Conversely, it must not be forgotten that popular historians have indulged in much exaggeration and distortion in describing the earlier immigrants, who were by no means the intelligent, religious, aspiring reformers that their descendants would like to have them appear. Thus, the pot should not call the kettle black and, as a matter of fact, neither is entirely black.

It is evident that the actual experience afforded by careful genealogic study, pursued in the proper spirit, tends to eradicate race prejudice as well as class prejudice. It will also, in the course of time, assist materially in solving various problems of heredity,

including that of the duty of the prospective ancestor to his prospective descendants. These problems cannot be solved so as to please both the demagogue and the know-nothing, nor both the socialist and the natural aristocrat. Personally, I am inclined to believe that accumulated experience will require a compromise on middle ground, in both instances but, at any rate, what we need is the truth, whoever is pleased or displeased and whichever prophet is shown to be right or wrong.

SEXUAL EXCESS AND DEMENTIA.

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MEN bend like reeds before interesting women. Women with fetching personality may be interesting to men in various ways other than for the keen steel of mentality. Both classes may repent it all later. Repentance usually comes after experience has been had. That experience was the honey. Repentance was the gall. Oft and again the obstetrician may face such instances if he have an eye to the transpositions of human estimates—if he have an ear to the muttered lisp and muffled plaint that testify of errors past and forfeits realized. The external social dress of community is what the world views in the paradox of outside concealment. The hidden night garb of humanity in the great white ways of seclusion is what is there revealed under the shadows of the other side of life. This double paradox, too often in the same case, through which humanity is smitten to its vitals and cowers under its masks of physical aliases for which the doctor is posed as decoy for the proprieties,—for which the doctor for his fee, either sensibly or without normal professional perception, enacts the role of medical playwright in the paraphrased name of healer for social evils that revel without recess of propensity, without any actual suspension of nature's dominant vagrancy in riotous pursuit of sexual pleasure!

It is access to persistent though unpardoned pleasure that is sought. Hence the excess. The injurious results of excess are voluntarily held from sight by votaries of pleasure till all is over. The retaliation of abused nature then calls for an equity settlement of scores, though the game be one of absolute loss to the principals and their wronged descendants. "Why did you risk yourself to this?" I asked an attractive and affable widow under forty with the denials of six years of probation, and then discovered herself in a perturbation of physical discomfort. "I will be plain, doctor," she responded, "It was because I thought that a graceful sexual connection would be the greatest happiness of life. But this lesson will teach me more caution." It is not calm reason that regulates the turgid impulse of sexual passion in many natures—the passion of life itself that drives so many to the pit of disconsolate suffering. Only yesterday I most gently dressed the acutely sensitive ulcerating patches that have been developing in steady succession for two months on the skin of a beautifully formed, handsome featured, young married woman of much intelligence, and who, before her marriage, never suspected that her existence

would be so untimely overtaken by this slow blotching of her skin to painfully mar her comfort—in less than two years after the honeymoon. By the patient internal use of the blood reconstructives, Compound Syrup of Hypophosphates and of Syrup Hydriodic Acid, equal proportions; also a daily capsule of Iodabin when the stomach will allow, we seem to be overcoming the blood depravity that severely mars not only her fair skin but her happiness.

The craving for excess itself in many individuals leaps the bounds of reason. It becomes a fatal mania. Its gratification even when nature's resources have been exhausted, played its final ghastly scene before the dismal gates of death—this in the struggle to never give up the habit of copulation as long as breath remains. I shall never forget the horror I experienced some years ago at the narration of two widows, shrouded in their sorrows of recent bereavement by the sudden deaths of their consumptive husbands by pulmonary hemorrhages that were induced during the physical strains of attempted copulation while distressingly exhausted with their incurable disease. In both cases, though remonstrated with by their apprehensive wives, insistence overcame wisdom or better sense, and their insane endeavor to repeat the sexual act was the suicide of passion in both men.

An unusually beautiful woman in figure and features and with exceptionally musical voice, yet young but then recently widowed by the lamented death in pulmonary consumption of her talented husband of forty, consulted me in regard to her uterine catarrh, which had annoyed her remittently for years, and had often compelled her to resort to vaginal injections for relief. I asked her why it was that when she improved she did not remain improved?—and whether she had encouraged irritation from too much repetition of intercourse? She affirmed that as a continuous experience she could never get well enough locally to derive any enjoyment from intercourse, because her admiring husband "was always at her!" I had known her husband since before marriage. Prior to marriage he had suffered by a mishap with an unclean woman. Therefore his later tuberculosis could not improve his physical stamina. I knew that he was passionately fascinated with his handsome wife's attractions. I never saw him come near her but that he patted her pretty cheek or plump white neck. Though exceptionally talented in many other ways, he was abnormally mislead in sexual passion for his admirable wife who for years faithfully nursed him in his debility which was constantly aggravated to exhaustion because of sexual excesses that hastened his end. I found that lady's aching soreness involved the lining of the womb and a swollen ovary. A beastly scraping of the interior of the uterus with curette had been urged by her physician abroad. I positively objected to the risks of any irritation or abrasion of tissues inside the womb, but advised instead the safer introduction into the uterus of soluble glycerized gelatin bougies moderately charged with antiphlogistic protargol combined with other remedies as indicated to clean and heal the diseased surface. Good tonics for the blood, reasonable rest, avoidance of excitements to facilitate cure. The safer and more rational plan of treatment in all respects. I next to never allow myself to pass one of these

soluble medicated crayons into the uterus to leave it there till all dissolved; but hold it there grasped at the blunt end by my long uterine dressing forceps until I think the proper degree of impression has been made at each treatment, and then withdraw the remainder of the crayon. As demonstration, in this lady's case, I made a treatment, wrote out full directions, and furnished her samples of the crayons to carry to her English physician on her return to London. But first made it clear to her mind that if she would avoid the risks of a flaming peritonitis and possibly the loss of her life, she should never consent to have abrasion or scraping done to the lining of her womb by a curette.

Usually it is the woman who first suffers from the sexual excesses of the man. Her capacity for realizing the pleasure that the man so persistently seeks is worn out or lost. One of my young patients whom I had delivered of three children in eighteen month succession, after the third was born stated that she had no idea while single that marriage to a man would bring such slavery of life. That she could not love a husband who made her dread the close of every day because night never failed to subject her to the man's excessive sexual demands. Early after her marriage her hair turned gray—ten years sooner than did the hair of her three unmarried sisters, all older in years than herself. There are beastly men who go practically insane in regard to frequency when opportunity is at hand. As example I will cite but one case in my own practice. He was a traveling man past forty, but had, during a brief visit to this city, become acquainted with and married a young wife from a family of my clientele. After an exhibiting absence of about six months he came to her home where she had remained with her mother and paid her own way with her sewing machine. Consuming a large portion of each successive night for the acts, for three nights he went through five copulations each night to finish. Instead of semen, his last acts brought blood. Then came the penalty of his inhuman madness, and I was sent for. I found him in bed, moaning with pain, distracted with suffering. Besides myself no one entered his room except his round-faced little wife who had obsequiously yielded to his satyriastic propensity. She waited on him with the meekness of a lamb who had just escaped assassination. He was in the throes of acute inflammation of the prostate, the bladder, and testes. I learned that years prior to his marriage to the young woman of my acquaintance he had contracted stricture from unholy gonorrheal alliances, and this condition of stricture now desperately barred the only channel to natural relief. His burdened bladder could only drain itself drop by drop of rankest contents as he lay in bed. No catheter could be passed for even temporary relief in the complications that linked him to luck. He was tough or he would have died in the slums of his orgies. In uniting herself to this physical reprobate his little wife was too ignorant and innocent to do more than to walk dumbly into the trap. And now she was shut up in his stinking room as his nurse and servant. I resorted to such remedies as I could then think of. We drenched his bowels with salines. The applications of hot fomentations to his privates were constant. He was practically fed on soothing mucilage of acacia

and of flaxseed. Gradually the fetid urine began to flow more freely. Swelling subsided. In ten days he was able to sit up out of bed. By the time his next season opened he was off again. But he left his wife with a pregnancy to bear in his absence. And more, a vaginitis and inflamed uterine neck and os uteri, which I subsequently attended and relatively cured. At time for this man's next return he did not come. Two years passed and nothing was heard from him. It was supposed that he had died unknown in some distant hospital. To myself, narrations like these, of the dark side of human experience, are most repellant. It takes real courage to open such social sores. Many there are who would hush and conceal the riot and rot beneath the crust of the world's doings. But no element of medical or moral righteousness can be candied by cold storage in darkened places along the back alleys of social conditions. The plowshare that cuts through the sod rank with sorrel, and turns up to light the under soil for a purifying dressing of antiseptic lime, improves the field and prepares it for wholesome crops.

The frequency of the copulative act conducive to the health of man has often been discussed from physiological points of consideration. There live a class of barren or half-barren acetics who denounce the function as the habit of sheer animal depravity. They allow to it no share in mellowing the relations of men and women in the careers of human life. The passion that naturally draws the sexes together for the promotion of love and companionship is by them derided as debasing to the higher planes of intellectual and spiritual conception. It is given out that men of mind should never cripple their powers of elevated thought and acts by yielding to the trysts of what is falsely termed the mere animal propensities. On the other hand it is claimed that men of strong mentality are men of strong sexual potency. That sexual activity is the component leverage of brainy men and women when normally endowed with the nervous potency of proficient leaders in the affairs of the world's progress. I shall not now attempt to thrash over any old straw about Martin Luther, Franklin, or other great men of past generations. It was said to me once by a discriminating publisher that the brilliant Henry Ward Beecher was favored with the magnetic attachment of bright women. Magnetism will effect more than physic for many a sensitive and sympathetic man or woman. When I was contributing a series of articles on the social evil at request by the eminent editor of the now defunct "Medical and Surgical Reporter," Doctor Brinton, he favored his subscribers with an editorial of special import on this subject, in which he contended that sexual intercourse, between healthy persons, limited to moderation, if the partners thereto were congenial, was both a tonic and a stimulant that promoted success in life: that it was neither the act nor the fact of legitimate natural coition that proved harmful, but the excess and abuse, of what was intended to be a pleasant function, that wasted the energies and sapped the vitality of men. My regard for Dr. Brinton's memory is sufficient to rest all argument on his wisdom of reasoning. The overdone function that saps the brain and nervous system is detrimental to level reason, to mental strength, to the security of sane intellection.

Thirty-six years ago I was called to a man who proved to be my first case of acute dementia. He was rather past middle life, married, father of numerous family, popular with a political and fire company class, kept a large saloon on the most spacious street for driving in this city. When called I found him in bed complaining of severe headache, slight fever, lassitude, general malaise. A dose of citrate of magnesia as bowel cleaner, followed up with a prescription of liquor potass. citrat., spt. nit. dul., fl. ext. taraxacum, flavored with mint water, brought him along nicely in three days. Normally relieved, he came down stairs, expressed his satisfaction with what he called my skill. Within two weeks I was called again in the night. Said he had not really convalesced, his symptoms returned especially during the nights. I repeated my prescribing with addition of bromide of potass. to the liquid previously given. It soon became apparent that the brain sedative and all won no gain. His nights were restless, and full of wild talk. Bromides and valerian had little effect. He took sufficient food, but was captious about its selection and preparation. From his peculiar loquacity when I visited him, and the strange turns of his talk, I decided he was developing dementia. His exhibitions of vehemence were worse at night, when he would declare that I was the best friend he had, and I must be brought. What soporific I would then administer would work off in a few hours. Next morning he would greet me cordially and dilate about the great wealth that was coming to him. That as soon as he got well he would attend to the people who were holding back his rights to two million dollars—of which I was to have a hundred thousand as my compensation as soon as I got him well. His children who had been pompous in conduct toward him were to be punished by the paucity of dollars they would receive. Cold applications to the head, alternating with alcohol to the scalp seldom contributed much relief. Digestion had not forsaken him, his bowels were easily managed. He had a gentlemanly brother who showed much interest, and asked if I thought a consultation would assist. We decided to call the eminent Prof. S. D. Gross,—the brother volunteering to liquidate the expense. Gross assured the friends that I was managing the case as well as could be done and that I should be continued. As the situation did not improve, the brother then suggested that a celebrated author on mental disorders be called. He briefly examined the patient and then adjourned to talk with me. His first two sentences were: "Doctor, you have a doubtful case. Has this man been a runner after women?" I could only reply that his business life and associations might allow that inference.

I repeated to the brother this suggestive "put" by the expert alianist. Told him further that the eminent consultant had also predicted that if the patient had led a fast life it was not probable that he would now recover. That settled the problem. The brother replied that since the question had come up, he would frankly acknowledge that the patient had always been a man of the world who craved women. "He took after every new face that interested him—one after the other in places he would resort to. That he would, with one or two men associates, call a cab, and start off on a night's revel, from house to house,

among dissipated women to waste his money and to waste himself; but to "go with" every inmate that he fancied, perhaps half a dozen before morning. Shut in by illness, this form of riot was suspended. His disordered brain was yet haunted by echoes of past orgies. One morning, after a night of delusive raving, he claimed to me that his sickness was interfering with his wife's needs—that deprived this way she might want to go outside—that she needed him because he knew she was of very amorous nature, and that he was in want for himself.

In view of the degenerate condition of the man's brain and mind, I promptly consulted the wife. Told her that she knew her husband was then insane, and cautioned her to protect herself from the erotic importunities of his insanity. But as he grew worse there arose a spirit of revenge. In his mental storm one night he forced his wife to sit all night upon a chair in one corner of his room till daylight lest he kill her. She began to fear for her life. By consent and recommendation of the patient's brother, we mutually agreed that the demented man should be removed to an asylum for the insane. There it so happened that violence by his attendants was resorted to in order to subdue the impetuous man in his tantrums. He was strapped to his cot in a struggle. In about a week he expired evidently of brain degeneration. But the end was not yet. What was more pathetic, before he had been sent to the asylum he had cowed his wife into sexual submission. In less than nine months after his death I superintended her accouchment and delivered her child—the fruit of an insane husband. The first day that she passed out of bed after confinement, she made the mistake of sitting between the warming stove and the drafty window. The weather was raw and cold in January. She was seized by a violent chill, and nearly lost her life with subsequent inflammation of the womb. For the year that this unfortunate woman continued to reside in my neighborhood, this child of mad origin continued to live. But an older one, a pretty little girl of four years, during the ensuing summer, in attempting to run across the street ahead of a street car, was run over and so crushed that life was extinct in a few hours. There was a series of severe experiences to make any wife and mother to quail with awe! On referring to my record of these tragic events, less than forty days elapsed between the time when mania was clearly developed in the above saloon keeper's case and the date of his removal to the asylum, where his death so soon followed.

In presenting this very realistic subject I quote no books. As a seeker of practical knowledge of human nature I would make my study from the actual life of my own times. Even within the circle of civil habit, the question of sexual excess cannot be measured with exactness to every individual alike. Differences of temperament and vital energy and nervous sensitiveness mark the lines between the sexual appetites and propensities of different individuals. Degrees of physical preparation between the wear of toil and the recreation of less exhausting line of life relatively limit or expand the inclinations and abilities of the sexual indulgence. While a very few do not seem to be wearied by one indulgence a day for years, there are many who are made sick by repeti-

tions of more frequency than once in four or five days. A wife of one temperament states that the approach of the husband twice a week seems natural and reasonable. A wife of a different temperament affirms that she has no regard for the function and dislikes to be annoyed sexually more often than once a month. A man of fifty affirms that since his fortieth year he has neither taste nor ability. A man of eighty testifies that after seventy the natural manhood is all in the brain only. A man of intellectual activity affirms that sexual congress three times a week is not excess. Another man of practical disposition states that in his opinion the sexual act oftener than once or twice a month is dangerous to health and will shorten life. One woman affirms that after menopause the suggestion is disgusting—while another woman of long experience asserts that the change of life never made any difference to her enjoyments. We perceive therefore, that inside the circle of rational habit, the repetition that would prove excess for one is far different for another. A middle-aged man, disposed to salacious habit, was denied by his intelligent wife from more frequency than once in five days—with result of much improved health. There are women as well as men, in whom sexual wear depresses the spirits, frays the disposition, upsets the current of health for several days. In such, excess would be brutal and criminal in either sex. One woman affirms that she would prefer to be entirely exempt from sexual contact—that prior to marriage no thought of private intercourse entered her mind or expectation. I knew another woman who affirmed to her confidants that she was never satisfied without a second contact on each occasion. When we calculate the diversity of natures among the public we serve we perceive the vastness of the problem with which we must deal in our professional ministrations to the inhabitants of earth about us—especially in nervous disorders and brain conditions.

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Pelvic Pain, when considered with regard to its character and distribution, will often yield suggestive information. The pain of pelvic visceral lesions is akin to that of the abdominal viscera. We must bear in mind the possibility of the development of neurasthenia, resulting in a diffusion of pain to other parts of the body. This neurasthenia may persist and may be one of the reasons for the continuance of unpleasant symptoms after operative treatment of pelvic lesions. Hysteria as manifested by pelvic symptoms, presents the same manifestations which distinguishes it as it appears in other parts of the body. The removal of normal ovaries under such circumstances and obsolete conception of the mechanism of such pain—such practice should be condemned. The so-called fibro-cystic ovaries are often found in women who enjoy perfect health; hence much caution is necessary in attributing pelvic pain to such organs; if operation is done at all, it should here be conservative rather than radical. Pain is the resultant of two factors—the lesion and the patient, declares E. Novak (*Am. Jour. Obst.*, April, '08); and these should be studied with equal fidelity, if we are to reach an intelligent appreciation of the true significance of pelvic pain.

IMMUNITY.

BY JOHN B. HUBER, A.M., M.D.

Visiting Physician to St. Joseph's Home for Consumptives.

AN individual is said to be immune when he is insusceptible to the action of a poison which is hurtful to his fellows generally; physicians apply the term exclusively to the infectious diseases. We do not, for example, speak of patients as being immune to Bright's disease or to arteriosclerosis. Immunity may be natural or acquired; it may be antibacterial or antitoxic; active or passive; relative or absolute.

As regards natural, or innate or hereditary immunity the human races and peoples show marked differences. Certain African races, for example, are immune to snake bites. The negro is very prone to tuberculosis, smallpox and leprosy, but is seldom attacked by malaria or yellow fever; whites on the other hand easily succumb to the latter diseases. The Jewish race is said to be comparatively immune to tuberculosis. We can easily explain such peculiarities upon the basis of a racial immunity having been established through century long contact with the given virus. African peoples have had always to cope with snake venom; the negro with the *steomyia*; the Jew with the tubercle bacillus.

Racial immunity can, moreover, be either comprehended by comparing it with racial susceptibility. Measles, for example, is a comparatively innocuous infection among us; we have become accustomed to it by long contact with it. On the other hand, when this disease was introduced among the Fiji Islanders, who had never before had to contend with it, many thousands among these unfortunate people died of this exanthem.

Generally speaking, natural immunity is in its nature essentially hereditary. In no other way are we to explain extraordinary instances of freedom from tuberculous disease among people who seem to live constantly exposed to this infection. Flick and King have given most notable contributions on this subject. In another place I have reported the following case: A father died of pulmonary tuberculosis at thirty-six, leaving six children, the youngest of whom is now older than the father was at the time of his death. They are all strong, healthy men and women, these six; and there has never been any manifestation of tuberculosis in any of them. Of the four sisters, all of whom are excellent specimens of normal, vigorous womanhood, three have large families of very healthy children. Of the two strong brothers, the elder, a man of forty-eight, has been under the imputation of having false teeth and wearing a luxuriant coal-black wig, from which gray hairs have been carefully excluded, so serviceable and hardy do these portions of his anatomy remain; and their freshness seems to obtain also as regards the rest of his organs and tissues.

There is an instructive difference between the human genus and other kinds of animals. Man, for example, is susceptible to many infectious diseases, such as typhoid fever and syphilis (though monkeys have been successfully inoculated with the virus of the latter), which, in the ordinary course of nature do not occur elsewhere among living creatures.

Man is not susceptible to rinderpest; dogs and Algerian sheep will not contract anthrax; nor chick-

ens tetanus, which is remarkable since they are constantly turning up the superficial earth, which is the habitat of the tetanus bacillus; the hog is naturally resistant to snake venom; the rat to diphtheria toxins.

The fact of acquired immunity is patent to all physicians, who constantly come upon it; as in an individual who has contracted a given infection and who afterward throughout his life remains impervious to it. In these cases the organism has acquired a resistance to the attacks of bacteria or their toxins. The exanthemata are typical in this regard. Scarlet fever, measles and the like generally confer immunity by a single attack, and generally in childhood; that is why after adolescence such diseases are very seldom contracted. Again, typhoid fever, syphilis and the like are seldom suffered more than once. With advancing years the danger from infection diminishes, so that in the aged hardly any but vesical infections and pneumonia occur; the immunity enjoyed by old age is thus in great measure the result of previous maladies and perhaps insensible vaccinations.

The distinction between antibacterial and antitoxic immunity is very important, from a practical viewpoint—that is from the viewpoint of those who are now so zealously working to perfect immunizing substances by which the infections may be combatted. In such diseases as typhoid and cholera, for example, the poisonous substances seem to be integrally associated with the bacterial protoplasm and not secreted in a soluble or diffusible form by the living cell; these are intracellular toxins or endotoxins, and they seem to be liberated only after the bacteria are killed and dissolved. The serum of an individual who has acquired immunity to typhoid is destructive of the bacillus responsible for this disease; but this serum seems not to be able to neutralize the toxin evolved by the typhoid bacillus. Here then we speak of antibacterial rather than antitoxic serum. In tetanus, on the other hand, the bacterium does not leave the site of the wound or initial nidus; the dreadful effects which it produces upon the nervous system are due to the soluble toxin which is secreted by the bacilli in the wound; and the poison thus generated is conveyed to the nerve elements through the lymph and blood channels. Thus, if we are to establish an immunity against tetanus, it must be of an antitoxic sort. In diphtheria, again, the immunity is antitoxic; the serum employed does not even injure the diphtheria bacterium.

Immunity may be active or passive. And here I wish to put down an exceedingly suggestive definition of immunity which I have memorized for my own benefit, and which expresses the fundamental idea upon which our modern theories of immunity are based; it is that of Ricketts, in his valuable book on *Infection, Immunity and Serum Therapy*: "Immunity which results from an infection depends on a specific reaction on the part of the tissue cells in response to the chemical injury produced by the bacteria or their toxins." It were well in this place to elaborate this basic idea. Suppose the diphtheritic infection, for example, to be introduced into the circulation of the horse, by hypodermic injection of minute quantities. The auto-protective resources of this animal are instantly called into play, so that in

time he has been rendered immune by his antitoxin; becomes indeed so superabundantly supplied with this immunizing substances that the blood serum containing it can be withdrawn and used in the way now familiar to us, to immunize human beings who have been attacked by the diphtheritic infection, and who have had neither opportunity or time to produce sufficient antitoxin for their own protection. The diphtheria toxin, observes Dr. Wm. N. Park, is taken up by the cells of the body in some such manner as digested food. The cells, stimulated by the assimilation of the poison, produce the antitoxin, which, when it comes into contact with the toxin combines with it and makes a new and harmless substance. With each fresh injection into the horse an additional amount of antitoxin is produced and accumulates in the blood; this allows each succeeding dose of toxin to be greater because it quickly becomes neutralized by the antitoxin. The indication of the occurrence of such a reaction as Ricketts formulates lies first in the patient's recovery, and next in the new antitoxic or antibacterial power which may be demonstrated in the serum. And we speak of active immunity in view of the active part which is played by the body in establishing this new resistance. And, as we have intimated, many antitoxic and antibacterial serums are now being manufactured by deliberately establishing a condition of active immunity in such animals as the horse.

In contradistinction to active immunity the resistance which we establish in an individual through the injection of an immune serum (such as diphtheria antitoxin from the horse) is a passive immunity, since it depends on the introduction of ready-made immunizing substances rather than on their production through an active process on the part of the patient himself. Active and passive immunity are varieties of acquired immunity. And with regard to the disease which caused the immunity or the character of the serum injected, they may be either anti-bacterial or antitoxic. Any one of these kinds of immunity may, moreover, be either relative or absolute. In the latter case infection would be impossible; but no physician would care to assure this for any patient. Generally measles or the mumps is contracted but once; but we all know of second infections, though they are comparatively rare. If immunity is only relative (as is usually the case) different conditions may be made to prevail which would render infection possible; a large number of bacteria, for example, will often cause an infection, where a smaller number fails to do so; there may also be a temporary decrease in the individual's resisting power through overwork, hunger, exposure, and excesses of all sorts.

Ricketts enumerates in a very instructive way the different forms of immunity; and simplifies a matter of the greatest importance to grasp properly and to understand. For example, a child which has received a prophylactic injection of diphtheria antitoxin is in a state of acquired passive antitoxic immunity to diphtheria. If immunity to typhoid has developed as a result of the disease, the condition is that of an acquired active antibacterial immunity to typhoid fever. The following classification of the forms of immunity is most valuable:

Natural Immunity: the inherited immunity of spe-

cies and varieties of animals; inherited family or individual immunity.

Acquired Immunity: active; or passive.

Immunity, natural or acquired, is either antibacterial or antitoxic.

Immunization is at least as old as the Persian potentate Mithradates; for Plutarch tells us that this king, by taking doses, at first very attenuated, and then gradually increased, of the virus of serpents, made himself invulnerable to the poisons which, according to the cheerful customs of those times, were put into the food of one's enemies.

The history of modern artificial immunity began with Jenner's vaccination for smallpox. When the relation between definite bacteria and specific infectious diseases became established, attempts at artificial immunization were instituted, with the result that protection against anthrax, rabies, bubonic plague and cholera have been afforded in each case by the use of an artificially attenuated virus. Up to very lately these immunizations have been preventive rather than curative. But since the advent of the diphtheria antitoxin that disease, and very probably some others, have been cured by injections of blood serums from animals suffering from the given infection. The list is constantly being added to. This field is a most promising one; in fact the most promising in therapeutics to-day. And it is probable that in the course of a few years many infectious diseases may be prevented or cured by these means.

Killing Birds by Millions.—Now that the possibility of the spread of various grave diseases by means of insects is being more and more understood the question of the wholesale destruction of birds in various parts of the civilized world is taking on something more than a sentimental interest; for birds subsist very largely upon such insects. The London Daily News notes how the useful swallows, warblers and fly catchers which are so pleasant a feature of English rural life are annually slain by the million as they come home through the gates of the Alps or go southward into winter quarters. Italian gunners (they are all gunners) destroy the birds that belong to Italian agriculture. The farmers in that country deeply regret the virtual extermination that has fallen on tiny, industrious, insectivorous birds. Humane Italians are ashamed of those of their countrymen who slaughter birds indiscriminately down even to the tilt and wren; but these humanitarians, alas, are neither numerous enough nor wise nor courageous enough to stop the outrage. "It is, however, clearly one of international importance in which the whole voice of Europe is entitled to be heard." Gunners are everywhere to be met with in Italy; but as a destructive agency, this is trifling by comparison with the nets that are spun round Lago Maggiore and Lago di Lugano. Some of these are a mile long and five yards high. Into these the tired birds fly by hundreds. There are "roccolo" hedges of hornbeam especially planted for the purpose and tenanted by blinded songsters and other decoys; square miles of entanglement, with imitation hawks to scare the birds into false refuge; and in the south of France (before that country joined the convention) electric wires for the killing of swallows by the thousands.

At one upper Italian station an ordinary morning's taking is 500 birds ranging from thrushes to willow wrens; on an average of 200 throughout the season of ten weeks, that single station is responsible for 15,000 birds in each autumn migration. At Como and Varese redbreasts are daily sold, not by the hundreds but by the thousand, the prices ranging from 75 centesimo a dozen in cool weather to 5 centesimo when the small bodies are liable to rapid decay. In October, 1890, nearly half a million small birds crossed the frontier at Brescia, not as they came into Sussex in spring, but in indiscriminate shapeless packets of fifty, from which can be picked out flycatchers, white throats, garden warblers, pipits and titmice. From Udine 200,000 are dispatched by rail; near Montegrado 14,000 swallows fell in three days, and "on the stone field Crao" no less than 3,000,000 in one season.

The Rest Treatment in Chorea.—J. Ruhrah (Arch. Ped., Feb., '08), keeps the child in bed, however slight the movements, until they have ceased entirely and weight has been gained. The mild cases are moved into the sun room during the day; the more severe are isolated. At first a milk diet is employed for several days until other food is asked for or the digestion seems good. Then solid food is added gradually. The bowels are kept open at first by means of castor oil, later by enemata or drugs. There is little medication; dilute hydrochloric acid if the tongue is coated; iron for anemia (Blaud's pills or a solution of iron and manganese peptonate); arsenic alone for anemia; salicyl derivatives if there have been rheumatic symptoms. In mild cases the movements cease in two or three days; in average cases in a week or ten days; in severe cases in two or three weeks. The bed is kept until all choreiform movements (tested by holding out the arms with fingers extended) have disappeared, and until weight has been gained. The child is put back to bed if movements return. In Ruhrah's last series of forty cases only one was not cured.

Indican in the urine indicates positively that there is putrefactive fermentation of proteid constituents of the food, an abnormality in metabolism brought about, in large measure, by the action of the bacillus coli communis in the intestinal tract, when this microbe is not inhibited by the action of the digestive secretions and their constituent ferments. Indican indicates two important facts—directly, putrefactive fermentation and indirectly defective digestive secretion and loss of inhibitory power over the bacillus coli. A careful study of the indican reaction, states W. H. Porter (Arch. Diag., April, '08), should enable us to diagnose a number of important conditions connected with digestion, the action of the liver and metabolism. Dr. Porter described in *The Post Graduate* (Oct., '07), a color scale which he has devised to be used with the indican test whereby one can differentiate simple putrefactive fermentation, profound metabolic disturbances, impending toxemia and biliary obstruction of various degrees.

Adrenalin Medication.—A. Brooks and D. M. Kaplan report (Arch. Int. Med., April, '08), that in a case of bronchial asthma adrenalin solution was used for over three years, the drug being given daily, into the muscular tissue, in amounts varying from ten to

120 minims a dose. At no time during treatment was the blood pressure affected to any marked extent by the enormous doses; nor was there evident clinically any effect of the drug on the heart or blood vessels. At autopsy the arteries showed moderate arteriosclerosis of the ordinary type, and also much focal necrosis, especially involving the media, similar in every way to the necrosis produced experimentally in animals by the use of adrenalin. From this case and from an examination of the literature the authors consider that the use of adrenalin when necessary, should not be prohibited on account of its effect on the arteries; for even when such enormous doses were used the changes were comparatively slight. We would not, however, base very definite conclusions upon a consideration of but one case.

Exercise and the Opsonic Index in Pulmonary Tuberculosis.—Inman (Lancet, Jan. 25, '08), demonstrates the relation between the opsonic index and the amount of work done. The explanation of the satisfactory results obtained by graduated labor lies in autoinoculation of the patient with his own tuberculin. Inman bases his paper on numbered specimens only; he could therefore not have been biased by clinical data. There is an absolute correspondence between Inman's opsonic findings and Paterson's clinical results as regards the relation of exercise to tuberculosis. The opsonic index has shown that the exercise to tuberculosis. The opsonic index has shown that the exercise has supplied the stimulation needed to induce artificial autointoxication and that the systematic graduation of labor has scientifically regulated the autointoxication in point of time and amount. This co-operation with the natural efforts of the blood has enabled Paterson to send his patients back to their accustomed work, however hard it may be. Paterson agrees with Inman that the opsonic index will aid in regulating the stimulus with scientific accuracy; and the clinical results can be obtained more certainly and rapidly. While this involves work in the laboratory, it means a more rapid and certain discharge of the patient, which is the main object of the sanatorium; there is consequently the power to treat a larger number of patients.

Metabolism Experiments in Artificial Feeding.—H. S. Carter (Arch. Int. Med., April, '08) has sought to determine the results of artificial feeding by rectum and subcutaneously. He concludes from an administration of nutrient enemata of peptonized milk and eggs in three cases, that it is practically impossible to nourish patients properly or to maintain nitrogenous equilibrium by such means. From a number of experiments on dogs with subcutaneous injection he finds that the hypodermic use of meat peptones and alkali albuminates is not feasible for artificial nutrition on account of their great toxicity and tendency to cause local necrosis. Skimmed milk, peptonized one and one-half to three hours, may prove fatal if given hypodermatically. Though it was possible in one case to furnish a dog with full nitrogenous requirements in the form of skimmed milk if it was injected in gradually increasing doses, for ordinary use milk peptone must be considered dangerous; and until some method of avoiding the natural toxicity of the product can be found, it should not be used subcutaneously for nutritive purposes in man.

English women are making great headway in our profession. They are now admitted to all the examinations of the College of Physicians. The Royal College of Surgeons recently took up the question; a majority of the Fellows were in favor of admitting women, but a majority of the members were opposed. The London Hospital, commenting on the result of this poll, declared that the opposition displayed depended on the members' ignorance of the excellence of women practitioners and on fear of their competition. These two objections, observes an exchange, cut each other's throats. Skilled men surgeons have no concern over the competition of unskilled women. There is, on the other hand, no good ground for barring the skilled woman from any of the honors or privileges of our profession. It is better to give woman what she demands cordially, than to wait until she takes what she deserves. She will certainly get it in the end; and the withholder will become all the more ridiculous the longer she has to wait.

Infection of a Whole Laboratory Staff.—The *Lancet* tells of a remarkable accident which recently happened at Czernowitz in the laboratory for examining food, owing to neglect of prescribed precautions, and transgression of the rules of the institute. Its director, a pathologist employed also at the veterinary hospital, made some experiments with a culture of *bacillus mallei*, which he supposed to have been killed by carbolic acid. While centrifugalizing the culture at great velocity the glass tube burst, its contents being scattered all over the room. The fragments were picked up by the half dozen persons present. No special precautions were taken, since it was asserted that the use of an antiseptic had made infection out of the question. Yet within three days two of the assistants fell ill; on the following day three more; and the director himself. Two of these patients died; and at the autopsies nodules of malleus were found in the bronchi and the lung parenchyma. The remainder recovered; but Dr. Luksch, the director, had a recurrence after a fortnight, the eruptions occurring on the ear. He was brought to Vienna for treatment, every precaution against infection being taken. The railway car in which he traveled was disinfected at once; and all those who had been in contact with him—his household and family, as well as the railway men in attendance on him during the journey—were quarantined. The clinical symptoms were those of lobar pneumonia; unfounded rumors were for a few days at work that the infection was in reality bubonic plague and not malleus.

Our modern discovery of the mosquito's agency in breeding diseases seems to have been presaged by Louis Daniel Beauperthuy, a native of Guadeloupe, who in May of 1853, while health officer at Camana wrote to the *Gaceta Oficial* of that day that for fourteen years he had made a microscopic study of the blood and secretions in every type of fever, and had discovered that yellow fever resulted from the stings of several species of mosquitoes. "The mosquito plunges its proboscis into the skin and introduces a poison which has properties akin to that of snake venom. It softens the red blood corpuscles, causes their rupture and facilitates the mixing of the coloring matter with the serum." Beauperthuy declared

that "marshes do not communicate to the air anything more than humidity, and the small amount of hydrogen they give off does not cause in man the slightest indisposition in equatorial and intertropical regions renowned for their unhealthiness. Nor is it the putrescence of the water that makes it unhealthy, but the presence of mosquitoes." In a communication to the Paris Academy of Sciences, dated from Camana, January 18, 1856, he wrote early in 1839 his investigations in unhealthy localities had convinced him that the so-called marsh fevers were due to a vegeto-animal virus "inoculated into man by mosquitoes."

Anti-Vivisection "Facts."—The *Medical Record* (Aug. 1, '08) has done a bit of investigation regarding an appeal issued by the New England Anti-Vivisection Society, to which was appended a list of 162 names, all alleged to be those of doctors in regular practice. It occurred to our contemporary, realizing that anti-vivisection arguments are likely to have faults apart from bad logic that it might be of interest to look up their names in the last edition of "Polk's." Seventy-three of the 162 names were not there at all. In some cases the absence was possibly due to deaths or changes of residences; yet the number of omissions is too large to be explained in this way; moreover, such an "appeal," professing to give expert opinion, and intending thereby to influence the public, should convey no false impressions. The *Record* found, moreover, regarding the men who, though doctors, were seemingly with the anti-vivisectionists "in their efforts to close the broadest gate and shortest path that leads to new facts in medical science" that only one of them was graduated since 1898; seven from 1888 to 1897; 31 from 1878 to 1887; 24 from 1866 to 1877; 10 from 1858 to 1867; 5 from 1848 to 1857; and 2 from 1838 to 1847; in nine instances the date of graduation was omitted. To get the purport of these figures one must associate them with the fact that bacteriological science came into existence in 1880, and did not receive general recognition until some years later. Only eight among the physicians who could be traced could have begun practice with a modern training. Significant, also, were these data concerning the appointments and practice of the signers. Minor positions in obscure medical schools, 4; small hospitals, 3; dispensaries, 2; asylums, 2; retired from practice, 5; druggist, 1; no appointments, 45. It is well observed that the methods of warfare which this "appeal" represents seem better suited to politics than to science.

The Antrum of Highmore is opened intranasally by D. T. Vail (*The Laryngoscope*, Jan. '08) who sterilizes the site of the operation, anaesthetizes the tissues (cocaine and adrenalin) and then inserts a perforator into the nose and thrusts it through the bony partition under the inferior turbinate. The perforation into the antrum is then enlarged sufficiently to permit the entrance of a curved saw, so constructed as to make an oval opening. The overhanging mucous membrane is trimmed off and the cavity worked out and packed with gauze. This operation is simple; it can be done speedily; free drainage is established; very little of the turbinate (none of the anterior end) is sacrificed.

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MEDICAL CONGREGATIONS.

WE have previously suggested that it might perhaps be wise to reorganize medical practice more on the lines of another learned professional service—that of the clergy. While such a scheme would undoubtedly have the dangers of favoring unfair competition and quackery—quite analogous to sensational church ministrations—we feel that it deserves careful attention and that the various problems involved should at least be carefully considered before the idea is definitely set aside.

The astonishing popularity of Christian Science and its attraction for many men and women otherwise of sound mind and of great influence is, so far as we can judge, largely due to the unappreciated desire on the part of the laity for instruction along medical lines. No one realizes better than the well informed physician, the vast possibilities of prophylaxis as compared with the relatively small increase in efficacy of measures directed against disease already acquired. What the medical profession has not grasped, is that prophylaxis cannot be efficiently practiced by a few salaried bacteriologists, chemists, engineers and executive health officers who have little familiarity with actual clinical disease; and that its principles cannot be instilled into the lay mind by a few words of advice thrown in as extras in the course of direct professional ministrations or social intercourse.

Why do the yellow newspapers devote illustrated pages to popular articles on medical subjects? Why does the conservative press include in its telegraphic news—acquired at considerable expense—accounts of medical discoveries before they are brought to the attention of the rank and file of the profession by medical periodicals? Why are apparently level-

headed and certainly educated and cultured men and women led astray by the flagrant sophistry of Christian Science, faith cure, new thought and osteopathy? Why have executives been able to impose new power in the medical staff of the army and navy contrary to precedent and to the self-interest of the line? Why are physiology courses popular in high schools and colleges? Why is it that scarcely a month passes without the appearance of strictly medical and even fairly technical articles in literary magazines? Why are physicians constantly tempted into talking shop at purely social gatherings?

To all of these questions, we believe that there is but one adequate answer, namely that the public has a serious and intelligent even if ignorant interest in medical science as one of the great forces of civilization and that it has grasped, better than has the medical profession itself, the importance of systematic prophylaxis.

We must remember that, even since medical precedents were pretty definitely established in America, the intellectual status of the community has enormously increased. Illiteracy is now a rare and admittedly disgraceful condition and in the states which are recognized as setting not the ideal but the necessary standard, ten per cent., of the rising generation are acquiring a high school and nearly two per cent. a full collegiate education. Moreover, the means of acquiring the practical equivalent of the latter, excepting in certain highly technical branches or those recognized as purely scholastic and specialized, are within the reach of almost any ambitious person who has the basis of an academic training and a moderate amount of leisure and energy.

Personally, we would admit that the general standard of education and culture is, on the whole, lower in the medical profession than in the corresponding social, business and professional classes of the laity. Many physicians would, of course, deny this, but we are inclined to believe that it is demonstrated by statistics. If this be admitted, it cannot be denied that a very moderate amount of time devoted to the instruction of the laity will enable it to grasp the general principles of medical science and such details as are necessary for personal hygienic purposes, and to enable intelligent co-operation with the profession in case of actual disease and to develop popular opinion in the support of governmental undertaking along sanitary lines. This claim is certainly no greater than that the average physician may be an intelligent citizen, or that he may know enough about law to serve as an expert witness or that he may be an active member in various non-medical, scientific, historic and literary societies.

At any rate, whatever our views as to the ability

of the laity to form intelligent opinions on medical matters, the fact remains that the community is very generally demanding such instruction, that it is applying it as well as it can, to its personal hygiene, and that, by its moral support and vote, it is sitting in judgment on such questions, whenever they come up as public issues or whenever any private appeal is made for support of some sectarian school of medical practice, semi-medical cult, or association based on sanitary and prophylactic ideals. In many instances, we are forced to appeal to this supposititious ability to uphold our efforts to secure the sanitary and hygienic well-being of the community. In many we must, in all fairness, give credit to the laity for a surprising degree of information along such lines. Unfortunately, we must often censure the laity for an appalling ignorance and childish simplicity in supporting fakes of the—to us—most transparent nature. But the very fact that we must appeal for lay assistance and that we have complimented lay knowledge on some occasions, cannot fail to give the non-medical public increased self-confidence on other occasions.

Half-knowledge is a dangerous thing. The laity has already learned that both from the standpoint of practical value and of intellectual interest, the general principles of medicine appeal to it strongly. The time has passed, if it ever existed, when the medical profession could think for the laity except in the actual guidance in periods of disease. Are we going to let the education, already well advanced, be continued by the yellow press, by charlatans whose self-interest is at stake, or by desultory private conversation? Are we going to rely, as has been seriously suggested, upon occasional public lectures and the capricious permission of editors of literary journals who will often admit the utterances of unfit writers and who will be more attracted by the specious exaggerations and one-sided ideas of impractical and often non-practicing physicians than by the more sober statements of men capable of forming public opinion rightly?

Any one of ordinary intelligence and education can read the Bible for himself and gain, at least, the more important ethical and doctrinal instruction which it contains. Anyone not a moral imbecile knows that right is right and wrong is wrong. Yet, aside from the personal, pastoral ministrations of the clergy, which are quite closely comparable to the practice of medicine, every clergyman of whatever denomination, is supposed to devote a large share of his time and effort to the general instruction of the laity in spiritual matters and such matters of general historic and educational interest as bear upon the sacred writings. The average Sunday school, in the

course of a year, involves an amount of attendance and study approximately equalling one-sixth of that devoted to secular education. The active adult member of a church is supposed to attend services and listen to instruction which, on the average, exceeds in amount of time expended, that devoted to scientific and literary study of comparable nature, at society meetings and lectures.

Applying the analogy to our own profession, are we not making a mistake in limiting ourselves to the actual treatment of disease or to such casual instruction on the principles of medicine and the rules of hygiene as we can give incidentally to professional calls and social intercourse? Is not the science of disease, and its practical application, of sufficient importance to the community to warrant the holding of formal meetings with our patients for their instruction?

And, if the custom were once established, would it not be as lucrative and as dignified for a physician to await the call of a congregation and, if necessary, to serve as an assistant to the established medical head of such a congregation, as to build up a practice as a milk route is established, one household at a time?

THE OLYMPIC GAMES.

THE Olympiad of 1908 has passed into history; except for some rumblings of discontent which can still be heard. There were in these recent athletic events some matters pertinent to be considered by the physician.

The training which seems necessary for the winning of such races is by no means always the most salutary for the participant. It is somewhat disconcerting to observe how often the athlete does badly in later years; how easily such an one succumbs to infections, by which the ordinary man of the street, who exercises moderately, who does not overstrain, remains unaffected. How pale such athletes are, how easily they become dyspneic, how prone to kidney lesions, how affected with hearts dilated past compensation, how early they succumb suddenly to disease. For example, there is Mr. Sheppard, who was the American champion in the 1,500 meter race in the last Olympic games; the physicians appointed in May last to examine him (so it is stated) pronounced him physically unfit for work on the police force, having arteriosclerosis and "inflammation of the cardiac membrane;" though he might be a good athlete, he might also in the end drop dead. Witness also the unfortunate and too courageous stroke in the recent contest between Yale

and Harvard, who collapsed utterly before the end of the race; and were not others in both crews pretty much in the same condition? And who shall forget the pitiful efforts of Dorando, "whose spirit was much greater than his bodily strength," who came first into the Stadium at Sheperd's Bush but was disqualified because he had literally been carried across the winner's line. This Marathon race, by the way, should in the interests of humanity, certainly be discontinued in all future Olympiads—or perhaps more properly, Olympics. It is a cruel and most gruelling running race of some twenty-six miles; and it is run to commemorate the deed of a most heroic soldier in order to announce the victory at Marathon, immediately upon doing which he fell dead. Dorando almost met a similar fate, without having a like noble object in view. There is no danger that the world will forget the splendid legend; there will be plenty of poets, spindle-legged and dyspeptic and knowing nothing of athletics, who will immortalize the great deed. It is well observed that while regular use prolongs the life of any machinery, whether it be of steel or of flesh and blood, the athletic driving of the human machine to its top limit—and oftentimes, we fear, beyond it—works lasting injury; certainly much too great injury to justify record contests. We would by no means decry sports or athletic emulation, but this should be moderate and not excessive.

SCHOOLS OF PUBLIC HEALTH.

WE learn with gratification that the Health Commissioner of New York State, Dr. Eugene H. Porter, has arranged with Cornell University for the establishment at Ithaca of a school for sanitary science and public hygiene and public health. The lecturers have been appointed from the university faculty and from the State Health Department staff; and several eminent specialists from Europe will lecture on topics in sanitary engineering. Dr. Schurman's lecture will open the course.

The subjects have been so selected as to make a symmetrical and well developed whole; and the course is expected to appeal particularly to students in medicine, in sanitary engineering and in politico-social science, and to qualify them more adequately than ever before, for positions as health officers and sanitary inspectors.

The Department has for a long time felt the need for the better training of health officers and sanitary inspectors; and has met this need in a fragmentary way by its sanitary institutes held in various parts of

the State. We indicated some time ago the evolution of the County Bacteriologist* under the nurturing care of the State Department. In other States the same need has been felt, as for example, in Indiana, where a school for the health officers of that commonwealth has annually been called by Dr. J. M. Hurty, the efficient and enterprising Secretary of the State Board of Health. We note that at the meeting in May last three hundred health officers from all parts of Indiana attended for the purpose of discussing public hygiene and of co-ordinating plans for thorough and effective work. This movement, we might well say, is in the air. It is becoming thoroughly realized that perhaps the most important factor in the present-day spread of hygienic ideas throughout the community is the public health officer. Logically then, this functionary must become well grounded in his duties. And this consideration is becoming so thoroughly recognized that institution after institution devoted to medical teaching is offering courses in public sanitation and prophylaxis. Commissioner Porter is well entitled to feel that the inauguration of the Cornell course "marks one of the most important advances in the work that has ever been made in America, and will do more to advance sanitary service in this country and educate our people in public health than anything that has been done in recent years;" and President Schurman, of Cornell, as cogently observes: "When I consider the vast importance of this subject for the health and lives of our people I am disposed to believe that this tentative course, which you are establishing, may in time develop into a great state school for sanitary science and public hygiene."

Apropos this subject we suggest the reading of Dr. Norman E. Ditman's most informing paper on "Education and its Economic Value in the Field of Preventive Medicine.** Here is set forth most impressively the need for such teaching as Commissioner Porter and the authorities of Cornell University are about to institute. Dr. Ditman well points out that such education serves at least two objects. To give information, and to train the recipient in the known methods of preventing disease and death; and secondly, to afford opportunities for extensive and adequate study of the diseases which are not at present surely preventable. Of the latter are those especially which we infer by analogy or otherwise to be infectious, but of the causative agency of which we are as yet in ignorance. Medical literature has of recent years made us acquainted with the tremendous economic losses which the civilized world has suffered by reason of preventable diseases; Dr. Ditman epitomizes these data in a really startling way.

*Medical Times, Oct., 1906.

**Columbia University Quarterly, June, 1908 (Supplement).

PROVISION FOR OLD AGE.

DANGEROUS pitfalls await governments which indulge unduly in paternalistic enterprises; the English parliament has fallen into one which time will certainly show to be very deep indeed. An Old-Age Pension Bill has almost unanimously passed the House of Commons, and will no doubt become law. It would seem that the liberals, who are now charged with the conduct of public affairs, have been, in the present comparatively quiescent state of English politics, at no little loss for "a positive, constructive issue to present to the people." None other seems to have been available than one which was to be found in the humanitarian tendencies of the day; an old age pension bill would please the masses of the people, and incidentally pay up some political debts due certain agencies, which conduced to the recent return to power of the liberal party. This enactment has well been termed a Bill to Destroy Thrift and Industry. By its terms pensions are to be bestowed upon every applicant, man or woman, upon reaching the age of seventy, who can produce a birth certificate; can prove that he or she has a limited income, or none at all; and has led a fairly moral life. (Whatever else is in default, this last the English always insist upon.) Indeed, so Sir Henry Norman finds, "a man with \$5.540 invested in consols would nevertheless benefit by the bill to the extent of twenty-five cents a week." The recipient need contribute nothing to the pension, which would obviate for him any occasion to save throughout his youth and prime, against the exigencies of advancing years. This premium will have been bestowed upon the shiftless and the moderate tippler as well as upon any other. Not quite to the same degree has any presumably rational government recognized the right to a living from the world claimed by the lazy, the criminal, and the hopelessly inefficient and retrogressive economic factor in civilization; not quite to the same degree are the able and the provident to be mulcted in behalf of the unfit.

Not only will the present generation of Englishmen suffer by the enactment of such folly; but a progressively greater burden will have to be borne by their posterity. The baneful effects will be cumulative indeed. Future generations recall pertinently enough Hawthorne's observation* that the past lies upon the present like a dead giant's body, so that it is as if a young giant were compelled to waste all his strength in carrying about the corpse of an old, an atavistic giant. In the near future, indeed, there will certainly result unfortunate complications in English politics; the Budget will certainly perplex and dismay succeeding Chancellors of the Exchequer.

*The House of the Seven Gables.

Mr. Balfour discerned a "vast potentiality of bribery in the bill." And, the pernicious principle having once gained foothold, why should not the age limit presently be lowered to sixty-eight, and then to sixty-five, and so progressively? "And the dread of age and disability, to which more than anything else, the world owes savings banks and their contents, is now to be known no longer in the 'tight little isle.'"

The redeeming features of German legislation seem quite lacking in the English measure. For, to the Sickness, Accident and Old Age Insurance which Bismarck had established for German workingmen, the government contributed a part; the employer a part; and the employee also his share from his periodic earnings.

Some inferences thus far made might well be applied to our American conditions. Our colleagues, for example, who are engaged in humanitarian enterprises (and who among us is not); and especially those among us who attend the sick in hospital and dispensary freely, and without thought whether the recipients are really entitled to charitable treatment, may well reflect if the good we do is not much overweighed by much that is pernicious, if we are not making ourselves responsible for an appreciable degree of the present very grievous social unrest. Besides, our profession is soon to address the government at Washington regarding health legislation; it were indeed unfortunate if in such an appeal, paternalistic considerations were unduly emphasized.

A system now established in Massachusetts seems excellent; and as free from baneful features as is possible in measures of this kind. The savings banks are authorized to issue policies of insurance and of old age annuities, under the inspection and guidance of the State Insurance Department. The investment of the funds is confined to a list fixed by law; the managers have no profit; all returns beyond the necessary insurance go to the insured. The annuities are limited to \$200, the life insurance to \$500 in the case of any one bank; though the same individual can insure in different banks. There are no solicitors or collectors; the State Actuary does all the report work; the State Medical Director regulates and supervises the physical examinations. Mr. Louis D. Brandeis** presents a table of what insurance and annuities will cost at various ages. A depositor aged twenty-five years, for a payment of \$1.30 a month, or \$15.60 a year, will carry life insurance for \$500; and, beginning at sixty-five (having during forty years paid \$624), he will have an annuity until death of \$100. The savings banks of Massachusetts are held to be strong, well managed, entirely trust con-

**Massachusetts Institute of Old Age Pensions.—"The Independent," July 16, 1908.

cerns; altogether able to carry on with safety the business here noted, according to the law's provisions. Instead of tending to the pauperism which seems inevitable to the English measure here noted, the Massachusetts system must surely encourage and reward thrift, and, most of all, "preserve and strengthen mainly self-reliance, the very root of energy and character in a community."

THE TRANSFUSION OF BLOOD.

TRANSFUSION of blood, though never a common practice, is still rarer among us than in former times; and this by reason that the infusion of saline solutions often suffices to restore the patient who has become comatose through loss of blood. Yet we now find it necessary to transfuse occasionally, as in the recent case of a woman who for more than eight years had suffered from successive hemorrhages. It having been decided after consultation that death seemed inevitable unless fresh blood could be transfused; her husband, a vigorous man weighing 180 pounds, became the donor. His arm was incised under cocaine, as also the leg of his wife; and it was computed that he gave a quart of blood, recovering from the operation in less than a day. The wife was presently reported as progressing excellently. A case perhaps even more pathetic is that of a man who had his left arm caught in a cogwheel and terribly mutilated; being removed to Bellevue he became very weak from loss of blood. His prospective son-in-law willingly offered his own blood, whereupon the two men were placed side by side and the transfusion begun. The elder man, however, was so exhausted by his sufferings and his previous depletions that he died during the operation.

The method of Aveling is very simple and requires an inexpensive apparatus, capable of being improvised. A small rubber tube, twenty inches long, with a stop cock at each end, should have at its middle a small bulb like that of an enema syringe. In addition only two blunt, bevel-ended canulas are required. The tube and bulb are filled by immersion in a warm saline solution (6:1,000); the bulb is expressed so as to expel all the air; the stopcocks are then turned off; the donor's arm is placed close to and parallel with the patient's; a vein in the former is opened, under cocaine, at the elbow; one canula filled with saline solution is then introduced, its point directed downward toward the fingers; and then connected with the tubing. Meanwhile an assistant opens a vein in the patient's arm, introduces

the other canula, also filled with saline solution, with its point directed upward; and then connected with the tubing. The stopcocks are now turned on. The tube is then compressed between the bulb and the donor with the finger and thumb of one hand, while emptying the bulb with the other. The assistant then compresses the tube between the bulb and the patient while the operator releases his pressure on the donor's side of the tube and on the bulb, which will at once fill with blood; finally the tube between the donor and the bulb is compressed. Then the assistant removes his pressure from the tube on the patient's side and compresses the bulb, by which about two drams will be forced into the circulation. A repetition of these processes can be made until as much blood is transfused as is requisite.

SIDE OCCUPATIONS FOR MEDICAL MEN.

IT is a very meaty paper which Dr. R. T. Morris has contributed to the Medical Council of June, 1908, on "Nut Culture for Physicians." This always original and helpful surgeon finds much recreation and scientific interest in this subject; moreover, his two hundred acres of nut orchards should, in his opinion, "be yielding a net income of \$25,000 per year when I am ready to retire from the active side of professional life, say at sixty-five." It is greatly to be hoped that many years must supervene before Dr. Morris' orchards will realize this computation. Here indeed should be a good investment, "aside from the fun and the satisfaction." One sees at once some peculiar advantages in such cultivation. Nuts are not perishable in the same sense as fruits. And the investment in them would differ from industrial stocks in that the industrial plant is decreasing in value from the time the investment is made, and the expense account for wear and tear and for expansion takes more and more money; whilst the nut plant attends to its own wear and tear and expansion from the moment of investment. Many kinds of nuts can be cultivated: the Pecan tree is hardy from Mexico to Massachusetts; Persian walnuts— "commonly called English walnuts for the reason that the tree did not come from England originally"—are hardy from California to Massachusetts; black walnuts can be grown in any part of our country; chestnuts from the Gulf of Mexico to Canada; shagbark hickory nuts from Texas to Ontario; hazelnuts from Texas (probably) to Ontario; butternuts and beechnuts from the middle south to Ontario; the pistache variety on the Pacific coast; almonds wherever peaches will grow. It will be a great many years

before nut overproduction will interfere with profits, because so many of those who are interested "are going to take it up some time," and the some time does not begin." Dr. Morris tells us of a poor old colored man who, while he was young and strong, was just barely able to make a living with cotton and corn on his small farm; but when he became old and too feeble to work, the pecan trees which he had set out brought him four times the income he ever obtained during his working days. Many a doctor will find application in this story, "replacing cotton and corn with grateful patients, and pecan trees with almost any sort of nut adapted to his locality."

The trend of Dr. Morris' observations may obtain in many other directions, both with regard to profitable investment and to recreation; almost every physician may know, if he does not engage, some enterprise akin to that of Dr. Morris' nut culture. As for investments—there can be none more humanely profitable (if we may coin the phrase) than model tenements, the nature of which we have recently set forth. And when one seeks not material ends, but recreation, there appear most brilliant examples, if not for emulation, at least for appreciation and from which comfort and pleasure are to be derived. Ollie Goldsmith was both physician and literateur; we are, however, bound to add that he was an infinitely better writer than practitioner. Keats also studied medicine, but the dissecting room and the operating table turned him from the profession—which was just as well. At most he would have made but a half-hearted and indifferent practitioner; whilst the world would have lost a wonderful poet. Coming nearer our own day we think at once of Oliver Wendell Holmes, who (though not much of a practitioner) was a medical scientist of the first order; as witness his work regarding puerperal fever; we of to-day read much too little the superior literary and philosophic works of this great man. In our day and generation is Dr. Weir Mitchell, than whom no neurologist is more distinguished, and who, beginning his literary activities at fifty, has among many achievements of this kind produced certainly the best novel dealing with the revolutionary period. And also Sir James Paget, whose work *Confessio Medici* we have recently admired in these columns and which is now delighting many readers, both in and without our ranks.

Imperial drink is a diuretic advised by The Practitioner. A teaspoonful of cream of tartar is dissolved in a pint of boiling water; a little lemon is added for flavoring; the whole is strained when cold. Another method: \mathcal{R} Acid potassium tartrate, 1 ounce; tartaric acid, 1 ounce; oil of lemon, 12 minims; refined sugar, 16 ounces; boiling water, 1 gallon.

BIBLIOGRAPHICAL

Pulmonary Tuberculosis and Its Complications with Special Reference to Diagnosis and Treatment for General Practitioners and Students. By Sherman G. Bonney, A.M., M.D. Professor of Medicine, Denver, and Gross College of Medicine, University of Denver, Visiting Physician to St. Luke's Hospital, etc. With 189 original illustrations, including 20 in colors and 60 X-ray photographs. Philadelphia and London: W. B. Saunders Company. 1908. Octavo pp. 778. Cloth, \$7.00.

This book is designed for the general practitioner, is devoted to the clinical aspects of the subject, the practical considerations being emphasized, and brief illustrative cases are introduced in the text.

The text is well and exhaustively written, conveniently arranged and amply illustrated.

Vaccine therapy is reported so far as results will permit, and the author's personal observations are most interesting. It is one of the best works on pulmonary tuberculosis for the clinician and the student, with which we are familiar.

Ophthalmic Surgery: A Handbook of the Surgical Operations on the Eyeball and its Appendages as Practiced at the Clinic of Prof. Hofrat Fuchs. By Dr. Josef Meller, University Eye Clinic, Vienna. The translation reviewed by Walter L. Pyle, A.M., M.D. Member of the American Ophthalmological Society, etc. With 118 original illustrations. Philadelphia: P. Blakiston's Son & Co. 1908. Octavo pp. 262. \$3.00.

This little book describes in detail and pictures the most important ophthalmic operations, as they are performed at the renowned Clinic of Fuchs in Vienna. The illustrations are excellent and the text clear. The work is highly commended.

Diagnosis by the Urine or the Practical Examination of Urine with Special Reference to Diagnosis. By Allard Memminger, M.D., Professor of Chemistry and Clinical Professor of Urinary Diagnosis in the Medical College of South Carolina, etc. Third edition, enlarged and revised, with 27 illustrations. Philadelphia. P. Blakiston's Son & Co. 1908. 12mo. pp. 116. \$1.

This is a most concise and practical little book for students and clinicians for the purpose of diagnosis.

A Clinical Materia Medica. A course of lectures delivered at Hahnemann Medical College of Philadelphia, by the late E. A. Farrington, M.D. Reported phonographically by Clarence Bartlett, M.D. With a memorial sketch of the author by Aug. Korndorfer, M.D. Fourth edition, revised and enlarged by Harvey Farrington, M.D. 826 pages. 8vo. Cloth, \$6.00, net. Half Morocco, \$7.00, net. Postage, 40 cents. Philadelphia, Boericke & Tafel. 1908.

The homœopathic practitioner considers this work the best he has as a clinical materia medica, as shown by the issue of a fourth edition.

The present revision has consisted chiefly in some minor corrections and the addition of over forty pages of new matter.

The book will be found useful to those for whom it is intended.

Quain's Elements of Anatomy. Editors Edward Albert Schafe, LL.D., ScD., F.R.S., Professor of Physiology and Histology in the University of Edinburgh; Johnson Symington, M.D., F.R.S., Professor of Anatomy in Queen's College, Belfast; Thomas Hastie Bryce, M.A., M.D., Lecturer in Anatomy, University of Glasgow. In four volumes. Volume I Embryology, by T. H. Bryce, illustrated by more than 300 engravings many of which are colored. Eleventh edition. Octavo pp. 275. Price \$3. Longmans, Green & Co., London, New York and Calcutta.

The present edition of this standard work comes to us in four volumes of which Embryology is the first. The other volumes will comprise respectively General and Visceral Anatomy; the Nervous System and Sense Organs; and the Bones, Ligaments, Muscles, and Blood-vessels. Each volume will be complete in itself and will serve as a text book for the particular subjects with which it deals.

The work has been completely re-edited, brought up to date, and fully illustrated.

Contributions to the Science of Medicine and Surgery.

By the Faculty in celebration of the twenty-fifth anniversary 1882-1907 of the founding of the New York Post-Graduate Medical School and Hospital, 1908.

This volume is a suitable tribute to the progress and standing of a great institution.

The frontispiece consists of an excellent likeness of our old friend the founder of the School and Hospital, the late Dr. D. B. St. John Roosa.

The text consists of four hundred eighty-five octavo pages of interesting, practical, illustrated articles, worthy of careful reading.

We should suppose that at least, every alumnus of the School, would require a copy.

It will make a superb mile-post.

Regional Leaders. By E. B. Nash, M.D., author of "Leaders in Homœopathic Therapeutics," "Leaders in Typhoid," "Leaders for the Use of Sulphur" and "How to Take the Case." Second edition. Revised and enlarged. 315 pages. Flexible leather, \$1.50, net. Postage, 7 cents. Philadelphia. Boericke & Tafel. 1908.

An excellent little book for those who wish to commit to memory the principal guiding symptoms of drug proofs.

Atypical Tonsillar and Peritonsillar Inflammations.—G. W. H. Merrill (Bost. Med. & Surg. Jour., June 4, '08) came upon an orbital involvement in which there occurred an external ophthalmoplegia with moderate exophthalmos; the retinal veins were large and full; there were patches of choroiditis both old and fresh. The case ran a long course, commencing with peritonsillar abscess, which ruptured, leaving a condition of peneral sepsis. Incision made later in the peritonsillar region was followed by profuse bleeding. In four cases which Merrill has had there was some difficulty in finding pus by means of the usual incisions. There seemed to be a gradual subsidence of the swelling and infection without there having been at any time a frank pus formation. In consulting the literature he has found quite general the difficulty of locating a definite pus pocket.

CORRESPONDENCE

PARISIAN MEDICAL NOTES.

To the Editor of the MEDICAL TIMES:

Paris, with its numerous and large hospitals, its cordial welcome of strangers, and its progressive medical spirit, ought to be more popular with American physicians who go to Europe for post graduate study.

We ought not to forget that the best and dominant part of the English people is Norman, and that our language is rather French with the verbal inflections worn off by attrition against Anglo-Saxon, than Anglo-Saxon with a French increment.

At any rate, there is a hustle and spirit of industry in Paris, medical and non-medical, that makes the city seem more homelike to an American than does London.

The lesser men in France may have a foreign look—due largely to their abominable tip-tilted whiskers—but if you met Dieulafoy or Mathien or Robin or Gaultier or Lion or Beclere or many of the others, young or old, in America, you would never think of their being foreign until they began to speak. However, a broader expression of the same fact is that national characteristics are mainly confined to the lower classes in any country. Education and refinement tend not only to a community along intellectual lines but to similarity in dress, customs and even physical appearance.

The American is struck with the frequency of tuberculosis in the Paris hospitals. All sorts of lesions, as of the nervous system, peritoneum, lymphatics, etc., which we would consider it rather far-fetched to diagnose thus, are commonly so considered and the diagnosis is usually corroborated. In several instances I heard students describing cases and winding up with the diagnosis of "bacillaire" which is as generally accepted as a synonym of tuberculosis as, with us, "specific" is of syphilitic lesion. And, whereas an American teacher would object that while the condition might be tuberculosis, many other pathologic states were more probable, the French professor would simply nod assent.

Analogously, ecchinococcal disease is very frequent. For example, Dr. Beclere very kindly asked me to demonstrate auscultatory percussion on a case of enlarged liver which he had shown us by the X-rays. The two examinations coincided exactly except that part of the enlargement to the left did not respond to auscultatory percussion although easily palpable. As previously pointed out by me, such a discrepancy indicates a difference in consistence. When asked to make a diagnosis of the nature of the enlargement, I suggested leucocythaemia which was ruled out by the blood examination, malaria, syphilis and cancer, in ascending order of probability. It was evident that the idea of malaria seemed so ridiculous that only proverbial French politeness prevented a general laugh and some of the men did smile as they assured me of the rarity of that disease in the neighborhood of Paris. The other diagnosis—syphilis and cancer—they considered as reasonable but they also suggested tuberculosis and ecchinococcal disease although there were no pulmonary nor other indications of the former and no fremitus produced by

daughter cysts. This sign, though by us considered as classical in our principally hear-say knowledge of the disease, is not commonly found.

The case was subsequently operated upon and it proved to be echinococcic. Dr. J. A. Aguerre of Montevideo, Uruguay, who is also doing some post-graduate study here, told me that in his country, echinococcic disease is very prevalent and that it is apparently indigenous, affecting the aborigines and the native dogs. The parasite is, so far as can be determined, identical with the European type. If the same par-echinococcus is indigenous to Europe and the south of the American continent, it is an exception to the general rule of distribution of parasites for in nearly every instance, a parasite—or any other organism—does not occur in widely separated parts of the world—both in the geographic and the geologic and ethnologic senses—unless it is practically world-wide in its distribution or world-wide except as limited by special factors, such as local peculiarities of climate, lack of appropriate hosts, etc.

Partly, no doubt, owing to the large population and the relatively large proportion of the population receiving hospital care, one sees here a considerable number of cases of the general class which are by no means phenomenal in America but which are rare enough to be carefully studied and exhibited to students with an ill-concealed and quite pardonable pride. Allusion is made to diabetes, fulminant gastric ulcer, cancer of the pancreas, hepatic sclerosis with marked ascites, caput medusae, etc., leucocythaemia, oesophageal obstruction, extensive dilatation of the stomach, etc.

Beclere's X-ray work, with very perfect apparatus and a crystal screen spread with barium and platinum cyanid large enough to cover almost the entire trunk, deserves a special article. The mere fact that ten or a dozen men at once can see the whole chest or abdomen, without the annoyance of a flickering source of radiation, in itself allows more careful diagnosis than where one man at a time uses a small screen with pupils previously contracted to accommodate his vision to a room moderately light. While beautiful radiographic work is done, the main dependence for practical diagnostic purposes, seems to be placed on direct inspection of shadows. I saw under treatment by X-rays cases of cancer of the face and jaw, operated upon and recurring and a curious case of keloid in a white woman, due a mustard plaster. A case of lupus and one of epithelioma of the larynx were also being improved by radiations from capsules of radium. One of these capsules, I was informed, represented a value of 8,000 francs—\$1,600.

There has lately been reported from London, a sad case of X-ray lesion which recalls the case of Dr. Louis Weigel of Rochester, N. Y. The victim had made a special study of the Roentgen rays and had had one arm and several fingers of the opposite limb amputated. Whether as in Dr. Weigel's case, the lesion was considered cancerous, is not stated. The victim has survived the multiple mutilations and, it is a pleasure to record that his devotion to science and to humanity has been rewarded to the extent of an adequate pension.

A. L. BENEDICT.

Paris, July 4, 1908.

MEDICAL NOMENCLATURE.

To the Editor of the MEDICAL TIMES:

In the May issue of your esteemed journal was published a correspondence of mine under the above title, directed against grave errors in Dr. Barner's English version of B. N. A., barbarously called by him "Terminology." Since I have been confirmed before the German Anatomical Society in exposing those errors I wish to ask most respectfully Dr. Barner to acknowledge in the interest of medical science that he has erred in publishing an English version of the Basil Anatomical Nomenclature without paying attention to my demonstrations of its grave faults.

A. ROSE.

ON SEX DETERMINATION.

To the Editor of THE MEDICAL TIMES:

In the July number of the Medical Times appeared a notice of a recent book on sex determination by Dr. Frank Kraft. The fact that the subject had been discussed in the September to December, 1906, and January, 1907, numbers of the Medical Times was mentioned by your reviewer. I think that in justice to the author of these articles, which were published under the title of "The Sex Cycle of the Germ Plasm," the resemblance between them and Dr. Kraft's book should be noted. Whatever there may be in this theory must be credited entirely to Dr. T. E. Reed, for it has been he who has developed it and fought for it during the past ten to fifteen years. Yet the author of "Sex in Offspring," although he says that he does not write as the discoverer but only as the collaborator, nowhere states with whom he is collaborating. It would seem that anyone who thought so highly of a theory that he could write a book in its defense, and yet never mention the name of the originator, as the originator, is guilty of a grave oversight to say the least. In two places only is Dr. Reed's name mentioned; here the initials are omitted and no reference to any article is given, and Dr. Reed's opinion is cited on points that are more or less immaterial, yet a careful reading of "The Sex Cycle of the Germ Plasm" and "Sex in Offspring" will convince anyone that the latter was written after the author had, to say the least, well digested the former. In this book the author cites in all, perhaps, seven authorities, of these five were quoted by Dr. Reed; the quotations are the same as Dr. Reed used and they are introduced in support of exactly the same contentions. Some of the paragraphs in "The Sex Cycle of the Germ Plasm" are so closely paraphrased in "Sex in Offspring," that arranged in parallel columns the resemblance would be striking. Quotation marks are frequently forgotten, and it is thus impossible for one not familiar with the authors cited to tell where the quotation ends and the author resumes. In the five articles comprising "The Sex Cycle of the Germ Plasm," there were more than fifteen thousand words; in "Sex in Offspring" there are less than fourteen thousand. There could have been, of course, no objection by Dr. Reed to a popular exposition of his theory by Dr. Kraft or anyone else, but this neglect of the most ordinary literary amenities is sufficient excuse for this letter.

Since the publication of "Sex in Offspring" its author has died, hence, no question of motives can arise; but on the other hand, it is equally impossible

for Dr. Kraft to accord to the author of "The Sex Cycle of the Germ Plasm" the credit which is his due; a reparation which undoubtedly he would have been willing to make.

Dr. T. E. Reed has now in preparation a volume that will deal in detail with the whole subject of the influence of the lunar cycle upon sex determination and the progress of parturition.

Cincinnati, August, 1908. RALPH REED, M.D.

RETROSPECTIVE

Germs.—The lay world is disposed to look upon all germs alike and consider the only good ones, like good Indians, those that have ceased to exist. The average layman, and not a few half-baked medical men, have an erroneous conception of bacterial life in its broadest significance. Of the many germs that have been isolated there are only a few that are inimical or incompatible with human life and comfort. There are germs and germs. The greater number of them have a salutary effect so far as concerns our health and happiness, for they play the part of scavengers in ridding the earth of infinitesimal poisons that surround us on every hand. For the most part they simply make life possible for mankind and in the economy of nature play a role that was intended by the All-Wise Creator. We could not subsist without bacterial action any more than we could live without our feathered friends, the birds. A government entomologist recently made the assertion that every spear of vegetation would be permanently obliterated by rapidly-multiplying insect life within eight years if every bird were destroyed. Were it possible to remove by the hand of some arch-enemy of the race all microscopic life from the earth man would see his finish in short order. When germ life is inhibited in the baby's milk for a short time we have an example of the disastrous results that may follow, for there may be ingested deadly toxic matter of which we were not apprised by the friendly act of fermentation. The main purpose of bacterial life is to eat up or dissipate matter that is no longer of use to man just as scavengers do in grosser life. The germ may be ubiquitous and omnipresent, but its special theatre of action is among the elements that are old, wornout and of little use to man. Its presence in fresh fruit, fresh milk or fresh air is mainly accidental. Its action is so silent and subtle and unobtrusive that it is little wonder that we occasionally poach upon its preserves, and vice versa. Most germs are good and subserve a useful purpose. Aside from a few virulent pathogenic organisms and a few microscopic parasites we have little to fear in this direction. The preparation of food and the process of digestion itself are founded upon this low vegetable life. A familiar example is that of lactic acid which makes our buttermilk, but this ferment is not inimical to life; on the contrary it gives us a food that is conducive to health and longevity. Instances might be multiplied to show the innocuous character of most bacteria and the groundless fears of the laity in this matter should be dissipated.

While these conservative—and perhaps in the minds of some, heretical—remarks are not to be taken as casting any aspersions upon scientific research,

yet we must recognize the fact that clinical results do not always keep pace with the findings of the microscope and culture medium. Man is not an animated test-tube and comparative deductions must be made conservatively. In the culture medium there is a passive condition very favorable to the propagation of most types of bacterial life that does not obtain in the human body. In the latter, when metabolism is near the normal line, antibodies are being constantly manufactured to repel the advances of bacterial invasion. Our very existence depends in a large measure upon this fact. Obviously more good can be accomplished by fortifying our own bodies than by fighting the enemy in the open: more in defense than in aggression. The laity should be taught that under ordinary circumstances a sound body whose functions are normal render it invincible to germs. However, the public should have better instruction on those sanitary conditions which are conducive to health and happiness. Pathogenic bacteria grow in places that are damp, dark and dirty and where the air is polluted by noxious gases and vapors. Sunlight and pure air in generous quantities are always fatal to unhealthy micro-organisms. The sale of fruits and meat does not always get the sanitary inspection and supervision which the importance of the matter demands. How often we see flies hovering over the foods which we see on display. Their sticky feet have perhaps just previously been in contact with some unspeakable filth and they are now disseminating poisons which may carry disease to those who are peculiarly susceptible. It is now thought that a goodly portion of our summer intestinal diseases are due to these six-legged pests. However, the housefly no doubt plays a utilitarian role in nature's economy by dissipating and eating up a class of filth that would go begging before being tackled by more esthetic and self-respecting scavengers. We do not care to associate with the garbage-man but we all recognize his mission as being a useful one. It is possible to protect our homes, our foods and all that appertains to our living against the contamination of these little garbage busybodies. No, we do not need so much talk on the abstruse and theoretical problem of germs as a causation of disease, but we do need more sane and sensible hygiene as applied to practical, every-day living. Public health and sanitation in its broadest and altruistic sense is a matter that has never had the recognition which its importance deserves. Just now President Roosevelt has appointed a committee of capable and representative American citizens to look into sanitary and economic conditions on the farms and the result of their researches in this direction will be embodied into suggestions in the President's forthcoming message.

Between the lines in this article a tribute is paid to medical conservatism. It is well not to discard all the old ideas, for it is one of life's paradoxes that we eventually get round to the old things again sooner or later. Some one has recently dug up the fact from some labyrinthine recess that Hippocrates enunciated about the cause and cure of the great white plague. On the other hand much of the laboratory experimentation of to-day that passes as science fails to make good and is soon gathered to the

snows of yester-year. Ever since Koch discovered the tubercle bacillus the scientific end of the profession has been looking for a serum that will conquer the dread disease. Many fake serums and specifics have been foisted upon a gullible public via the profession, but as they were without merit they soon sunk into desuetude. Another matter that needs a little tempering conservatism is that of enthusiastic surgery. How many hundreds of operations have been performed each year of late for an appendicitis that did not exist, or at least with a condition that required no operation?

The "exploratory incision" as a tentative procedure in obscure cases covers a multitude of things and explains away in a satisfactory manner the taking of many innocent lives. Mercenary motives are not always to blame for the many unjustifiable operations performed. It is more often due to the average doctor letting some one whom he thinks above him do his thinking. The past two or three decades have seen many changes and vicissitudes in gynecology. The styles of fancy tailorings upon the female genitalia changed about as often as the changes in feminine headgear. The limit was reached when women were without cause or provocation unsexed by gynecological surgeons as nonchalantly as you would light a cigar. Ten or fifteen years ago the writer knew an ambitious surgeon who deprived women of their ovaries in all hysterical and neurotic conditions if they did not yield readily to more palliative and less sanguinary treatment. Not many years ago the majority of women imagined that they had some "womb trouble" and for this alleged displacement or deviation wore pessaries as regularly as they wore corsets. At that time it was necessary for the doctor to keep on hand about a half-bushel of pessaries if he had much of a gynecological clientele. But where are the pessaries now? Has the wind blown them all away? These instruments are of much utility in properly-selected cases, but their use has been almost wholly abandoned simply because they are no longer the style. Fads have come and gone and the entire space allotted to me would hardly allow me to take a cursory glance at them. While surgery has been the marvel of the age and blessed a countless number of lives, yet it is a shrine at which every lickspittle has sought to worship. Medicine has been usurped from its proper place and put in surgery's category. The attempt has been made to cure everything with surgical procedures. As grand a thing as surgery is it has its limitations. The over-ambition of the surgeon and the pessimism of the laboratory pathologist are largely the cause of drug and general therapeutics taking a slump the last few years. Many people feared the one while the other had nothing but grim scientific facts and the exactings of an inexorable fate to offer; hence many turned to Christian Science and its ilk as one drowning turns to the proverbial straw. Therapeutic nihilism has been growing the last few years like a prairie fire. People have less confidence in doctors now than ever before. It is due to heresy within the ranks and the profession has no one to blame but itself. We have educated people to the point of believing that if they have nothing to cut out they need not expect in the doctor the factotum once looked upon with childlike sim-

plicity and faith. "Nothing in drugs" is warbled in our ears daily and with many the doctor is a standing joke. Too often the physician who does not constantly find conditions requiring surgical intervention is a poor dub. These thoughts are not the emanations of a pessimistic mind but simply an attempt to show up the true trend of matters medical. We have a rich and resourceful armamentarium of drug and mechanical agencies to draw from when the sick look to us for aid if we will but make use of them. Even by drugs skilfully and judiciously employed we can accomplish no little. By drugs we can produce both local and general anesthesia. The nervo-vascular system can be quite effectively controlled by drugs. We can make the patient rest, sleep and eat, relieve hepatic torpor and favorably impress metabolism. We can produce emesis, diuresis and diaphoresis. We can neutralize gastrointestinal toxemia, cure syphilis, malaria, diphtheria and several other diseases, or overcome morbid conditions that eventuate in disease. All these coupled with correct hygiene, dietetics, psychotherapy, etc., should make the skilled physician and his services worth while.

Doctors' fees and their collection is a topic of ever-seasonable interest. None other gets quite so close to the doctor's heart. It is his bread and butter. There are very few medical men when discussing this topic who think their remuneration is commensurate with their services. They all seem to think that they do not get what they are worth. Very often they do not. Too many physicians are underpaid. It is no unusual thing to find doctors in the city in indigent circumstances, many of them as poor as the proverbial church mouse. Too much competition and a multiplicity of conditions which city life imposes may be assigned as the reason. Physicians in the rural regions have always had ample remuneration, a good portion of them soon acquiring a competency, but practice in the farming districts is not what it once was. Even in the isolated localities there is competition, and to make matters worse the farms are in considerable measure becoming depopulated by their owners moving to town. Farming is now done on a large scale by improved machinery and with need of little help as compared with former times. At any rate physicians do not get the compensation and live the life of luxuriant ease that they once did. Many diseases have become eradicated, which may be another factor in limiting the doctor's income.

It is surprising to many people to be told that the average income of doctors in the United States is less than a thousand dollars per capita; less than that received by the average skilled or artisan laborer. Many capable men with some specialty, like the eye and ear, are barely making a living. When we consider the fact that the purchasing power of the dollar is now not much more than half what it was ten years ago, it is apparent that doctors as a class are not living on "Easy" street. Physicians may often see chances, alleged at least, of bettering their conditions financially by removing to other states, but the exactions of the state boards usually preclude this change. There is a great deal of unrest among physicians and nearly all imagine they

would do better somewhere else. "Beyond the Alps lies Italy." Those advertising their business for sale are making two or three thousand dollars a year if we are to rely upon their reports. They nearly all have unhealthy wives and a change of climate for health's sake seems imperative.

It is only the men high in the profession who can hope to charge the monumental fees and the men who exact them are not only skilled physicians, but who would perhaps have played the game of high finance pretty well had their calling chanced to be along other lines. It resolves itself somewhat into the matter of temperament and environment. It is a difficult matter for doctors to stick to a uniform scale. So far as circumstances will permit fees should conform to a fixed scale, but this is utterly impossible in all cases. No one hurls the unethical anathema at the men at the top of the profession who charge the giant fees. Samuel J. Tilden's physician got \$143,000 for seven years' services. Perhaps many men in the profession have done as much work without getting more than the same figures with the ciphers left off. Jay Gould paid his physician a regular salary of \$15,000 a year whether sick or well. Dr. Pepper once received \$10,000 for one visit, while Wm. C. Whitney's physician got \$25,000 for one week's services. But as comparisons are disagreeable I will revert to a different phase of the subject. There are two standards that should govern the fee question, one being what the doctor actually regards his services as being worth and the financial ability of the patient to pay. As the work of most doctors is with people in a mediocre station of life, the latter problem is not one of so much gravity. A fee should always be judicious and large enough without savoring of extortion. A fee that is too large suggests to the patient the methods of the hold-up man and may cause you to lose his business. If it is too small you may lose him, for it may not measure up to his idea of respectability. Where there is some reluctance on the part of the doctor to state what his fee is the matter may be sometimes approached in a tentative manner by his citing similar cases in the hands of other physicians and the fees charged for the same.

But the naming of fees and collecting them are two vitally different matters with most medical men. The wail that is heard from doctors the country over is that they are poor collectors. They see so much poverty and suffering of one kind and another, so much domestic infelicity and so much need in the home where it takes all the bread-winner can earn to keep the family intact, that the doctor who has any real milk of human kindness in his heart is not aggressive in trying to collect many of his bills. It is well not to let a bill get too old. The value of your services wane in the mind of the recipient with the fleeting days. There are various kinds of adroit systems of "dunning," and collecting agencies claim that they have never-failing schemes for extracting money from the old and tough delinquents. If you expect to remain in that community I would not advise putting any accounts into the hands of foreign collecting agencies. If you can not collect your bills yourself some attorney or justice of the peace in your locality will render you more satisfactory serv-

ice than some one living at a distance who has no real interest in the case if the fees are not forthcoming. About all the alleged collecting agencies do is to send out a series of "sassy" letters that keep getting stronger each time until they become positively threatening or insulting. Very few people are ever scared into paying a bill. Before they arrive at the scary stage they walk up and pay their bills. If they are beyond the pale of the law they have nothing to fear and don't scare worth a cent. In an unguarded but evil moment I was once persuaded by an oily-tongued agent to hand over some old, worn-out accounts with the promise that it was another case of casting bread upon the waters which would one day return to me much increased. I learned from that experience that it does not pay to put good bread out to soak, for the deal cost me more money than I ever got out of it and I came very near getting several lickings into the bargain at the hands of belligerent delinquents.

When it can be made convenient to see a delinquent in person it is better than a letter or statement, for the latter is invariably regarded by the recipient as a "dun" no matter if an explanatory letter accompany it couched in the most Chesterfieldian terms. In the matter of collecting it pays in the long run to tell patrons the truth; tell them you need the money, which is usually equivalent to the truth. Lead your clientele to see that every dollar over your cost of living is spent in office equipments and books which make you a better physician and therefore calculated to make your services to them more desirable. It may be business to tell a debtor that the money due you is yours (if you can get it) and that you want it, but a diplomatic plan will usually be attended by better success. The person who cares to take the time and trouble to cater to individual whims and peculiarities may be able to collect accounts that would be ignored when presented in the usual manner. Good collectors individualize the debtor and size up his vulnerable, and therefore approachable, side and cater to it accordingly. When one string does not work another is pulled. Physicians, however, do not as a rule care to resort to tactics on a plane with those employed by the average bill collector. It jars our ideals and lofty conceptions when we are obliged to resort to strategy to collect what is rightly ours, but grim necessity is sometimes the promptings of such a procedure. When such methods are to be employed there are two plans that usually overreach all others: Touch up the debtor's pride or enlist his sympathy in your behalf. If you gently hint to him that it has been rumored that he will not pay his bills, but that you believe he will, your chances of collecting your bill are perhaps 90 per cent. better than if you had approached him in a more vigorous manner. The vigorous plan might work on those who know themselves to be financially responsible, but this class are usually in a hopeless minority. Enlisting the sympathy of the fellow who owes you works tolerably well if not overdone. Just a very few years ago a young physician of my acquaintance was walking the floor one day wringing his hands in deepest melancholy when a patient entered his office. The patient "happened" to be in arrears. Of course he

asked why the doctor was taking on so. The doctor replied that he was overwhelmed with debts and that he did not see a ray of hope, and a great deal more that wasn't so. The patient made arrangement for paying his bill then and there. The doctor, by the way, is now in the banking business and makes the practice of medicine a secondary consideration. Another doctor who had a number of accounts long overdue had his typewriter make a supply of copies of a threaten-to-sue letter which the doctor had received from a supply house. These duplicate letters were used to wrap around bottles of medicine which paraded to the world the extent to which the doctor was up against it. These incidents certainly give evidence of carrying the idea to the limit.

To What Extent is Migraine Amenable to Treatment of the Eyes.—E. M. Alger, whose work is always authoritative, notes that three ocular conditions are conceivably concerned in attacks of migraine. First and most important, there is overuse of the ciliary muscles in accommodation, which may exceptionally occur in normal eyes by reason of immoderate use, but is almost invariable in hyperopia and especially in astigmatism, since it is only by accommodation that clear vision is secured. Second, come conditions in which binocular vision is impossible without undue strain of the extrinsic muscles of the eye. Third, there is the cerebral fatigue that comes from the constant interpretation of distorted or unequal retinal images, as in astigmatism and anisometropia. Obviously, the relief of these conditions may often be a very complicated problem, perhaps impossible to solve. In most cases Nature herself has compensatory powers; if we can bring the error within the limits of these powers we shall have given all the relief necessary. This is the reason why inexpert refraction work is so often quite satisfactory to patients under ordinary circumstances. In migraine and many other nervous conditions it is this very attempt at compensation that causes trouble; and a much closer connection is called for. The one great defect in the evidence is the widespread failure of ocular therapeutics to afford relief, even when applied by the best men; first, perhaps, because the ocular treatment is seldom as painstaking as it should be; and second, because there may be cases in which eyestrain is not the chief cause and perhaps not at all an etiological factor. On the other hand patient in whom hereditary tendency is marked, may evince an explosion from any one of several exciting causes. Correct treatment by the ophthalmologist would prevent some, but not all, of these attacks; other cases, such as are purely of eyestrain, are completely relieved.

Local Treatment of Some Internal Diseases.—E. H. Long (N. Y. State Jour. Med., June, '08), considers that local treatment is applicable whenever the site of the disease is accessible. Aside from skin and some surgical diseases, certain disorders of the respiratory and digestive tracts are amenable. Pneumonia, being a general infection, does not offer much chance for local treatment; but such localized affections as bronchitis and tuberculosis may be helped by this means. The purely hygienic treatment has of recent years prevailed, but antiseptic inhalations

are rational and useful in incipient cases and should take first place in the medication of this disease; inhalation is of course of secondary value, but it becomes all the more important the less perfectly the hygienic treatment can be applied. Combinations of phenol with benzoin preparations are antiseptic while mild in action, because of the analgesia induced by the phenol. (E.g. phenol, Mx; comp. tr. benzoin, Mxxx; glycerin qs. ad. 5i; the whole to be poured upon a pint of boiling water and the steam inhaled twice daily for ten or fifteen minutes.) Five minims of tincture of iodine may be included for cases with purulent expectoration. In chronic bronchitis this means may be employed, particularly where there is much expectoration. Acute bronchitis does not require it; but in a protracted case, with expectoration showing a subacute infection we may quickly correct the condition by means of antiseptic inhalations, so as to remove the danger of tuberculous infection of the affected tissues. Experience has demonstrated the value of inhalations of antispasmodics in cases of asthma. Water by way of lavage will accomplish what no other means can in certain gastric disorders; and the use of gastric sedatives and antacids illustrates the further application of the principles of local treatment in diseases of the stomach. The local action of antiseptics in stomach and intestines is important. A simple gastric fermentation can be relieved by minimum doses of phenol before meals, diluted to one-half or one per cent. solution, and given a short time before meals, so as to have effect before further dilution occurs. If irritation is present a bismuth salt may be added. Fermentation in the small intestine especially is less easily corrected by antiseptics, because of the changes that the drug is subject to in passing through the stomach; nevertheless the less soluble agents such as salol, betanaphthol and the sulphocarbolates, often serve well. Phenol and the phenol derivatives restrain fermentation quite readily, while they do not seem to have much effect upon the digestive enzymes. In diseases of the large bowel local treatment should as a rule have first place; the effect of a drug given by the mouth must be very uncertain indeed after it has traveled as far as the ileocecal valve and has met with the various chemical conditions on the way. Local treatment by way of the rectum, however, can be quite definite unless anatomical or pathological conditions interfere. Even when peristalsis is to be lessened by systematic medication the drug (as for example, opium) can as well be used in a suppository and with less nauseating effect. In diarrhea and dysentery vomiting may necessitate such local administration of an anodyne. Occasional irrigation in colitis is especially necessary by reason of the microbic character of the disease. In severe cases, with pain and very active peristalsis, and also in ordinary cases of dysentery we might medicate by the rectum, by employing a suppository of local and general sedative character after irrigation. A useful combination would be of cocaine for the local effect, so that the suppository may be more easily retained; extract of belladonna, for a more prolonged local action; and opium to secure rest to the irritated bowel. Liquid medication may be preferred; in either case the stomach would remain undisturbed by drugs.

Skatol, observes C. A. Herter (*Jour. Biolog. Chem.*, Jan., '08) is not always present in the contents of the human large intestine; it is seldom to be found in healthy children, and then only in traces. It is frequently absent in healthy adults; and when present occurs only in traces; it is abundant and persistent in the feces only of those who are or have recently been ill of some intestinal disorder. In some cases of excessive intestinal putrefaction skatol formation is considerably increased, often together with increased indol formation but sometimes without this. The feces may contain skatol but no indol, although the presence of indican in the urine will point to indol formation in the intestines. There is no evidence that indol is in such cases absorbed more rapidly than skatol; hence the presence of skatol without indol is probably due to the later production of the skatol. Patients suffering from excessive saccharobutyric putrefaction (due mainly to putrefactive anaerobic bacteria) manifest increased skatol production. There are strains of the bacillus of malignant edema and of bacillus putrificus which form skatol. The bacillus coli communis evolves indol but usually no or only mere traces of skatol; Both indol and skatol are derived from tryptophan; there does not seem to be any other constituent of the proteid molecule capable of yielding these two substances. The conditions under which skatol is evolved are fundamentally different from those which govern indol formation. The production of indol-acetic acid is perhaps a necessary step in the formation of skatol, most bacteria attacking it with difficulty, if at all.

Aortic Aneurism has usually a termination that early detection of this lesion is most important in order that any treatment which may possibly be of avail may be instituted. N. D. Arnold (*Am. Jour. Med. Sc.*, April, '08), notes that except in the rare cases where swallowing is difficult the earliest symptoms, as manifested by pressure, are usually either pain or disturbance with the respiratory apparatus—the latter coming from pressure on the air passages or on the recurrent laryngeal nerve. One thinks of heart disease; and the true meaning of the symptoms here stated is understood by not finding a cardiac lesion that will explain them. The picture of an aneurism in early stages is not uniform; it varies greatly with the position and the size of this lesion. A very careful physical examination is essential. The X-Rays are useful in aneurisms of the ascending or transverse arch; they may also (when pulsation is seen) help us to decide between an aneurism and a solid tumor. On the other hand a negative X-Ray report is no conclusive proof against the existence of an aneurism. Arnold believes that to detect an aneurism of the arch of the aorta requires no greater skill than does the recognition of an incipient tuberculosis; it is therefore possible for the general practitioner to make the diagnosis. When discovered early the treatment is not the same as for advanced cases. Absolute rest in bed is not essential; there should, however, be moderate exertion and equanimity. Though the disease cannot be cured life may thus be prolonged and made comfortable. The vasodilators are indicated.

A Vacuum Operating Room or cabinet was recently exhibited by Prof. Sauerbrück, of Marburg, Germany, in the Rockefeller Institute. There is thus provided a germ-free atmosphere; and the air pressure upon the exposed parts of the patient during operation is much less than under ordinary circumstances. Sauerbrück operated upon a dog whose head was stuck through a hole in the side of the cabinet; his body remained within the cabinet on a table. Two surgeons went inside, after which it was hermetically sealed, except for an arrangement provided to let in as much air as the surgeons needed for themselves; this air came through a water casket, which purified it in its passage. The dog's lungs were laid bare, so that tuberculin could be applied directly for experimental purposes. Sauerbrück considers that this vacuum cabinet makes it comparatively safe to excise a portion of a tuberculous lung. This organ can moreover be kept better exposed to the surgeon's inspection; the etherized subject does not suffer from atmospheric pressure upon that organ and does not suffer from failure of respiration as would be the case under ordinary circumstances. It is said that such a cabinet, much larger than the one in which Dr. Sauerbrück worked, will be installed in the Rockefeller Institute.

The Gospel of Top Milk.—A Jacobi (*Med. Rec.*, June 20, '08), reviews the process of intestinal digestion and observes artificial feeding is never equivalent to mother's milk; the alleged improvement in artificial feeding is overestimated; there are many differences between mother's and cow's milk; good results are obtained by a reduction of the fat to two per cent.; feeding is more successfully managed by brains than by mathematics; cane sugar is to be preferred to sugar of milk. Cereal decoctions should be increased when the baby shows a loss of weight; asses' milk is to be supplied when cow's and mother's milk produce unfavorable results. The gospel of top milk is a heresy.

The reduction of infant mortality from digestive diseases in large communities will depend upon clean milk, properly proportioned, for these infants and young children who can not be fed on the breast; and intelligent care and feeding by the physicians and parents. S. E. Setty (*J. A. M. A.*) suggests to these ends: rigid state or municipal inspection of all milk from the producer to the consumer; that milk dispensaries should properly modify clean milk in feeding bottles ready for use, the milk to be pasteurized if used in tenements; a campaign of education to instruct both physicians and parents in the art of infant feeding and the recognition of the necessity and economic value of clean milk; the employment of trained nurses in the summer months to follow up cases of digestive disturbances in infants and to aid physicians in their work; the continued improvement of tenement houses so that the dwellers may have the benefits of proper sanitation and plenty of fresh air and sunlight.

Cats as Plague Preventers.—A. Buchanan (*Brit. Med. Jour.*, June 20, '08) describes the religious customs of the Mahomedans and Hindus, who venerate these animals. Houses in which they were kept were free from plague. Rat-proof houses built of wattles are generally free also; but these creatures

overrun ordinary mud huts. In the early days of plague epidemics many mistakes were made; cordons were drawn around villages and towns so that infected people could not get in, but infected rats might easily get through; disinfection was vigorously practiced, "but while this operation was in progress the rat was sitting comfortably on his furrow, ready to come out as soon as the disinfection process was over." The plague victim was hastily segregated to a plague camp, but it is now known that bubonic plague is practically never conveyed directly from man to man. It came to be known that the "safest place in a plague epidemic is a plague camp," and those in charge of these camps found that the servants living in the camp practically never took plague, although they were handling plague patients all day. Buchanan thinks that the duration of the bubonic plague in India will depend on the time it will take for the recognition of the cat as the best plague preventer.

Venesection and Circulatory Disturbances.—Hahn (Medizin. Klin., June 14, '08) has found venesection an excellent procedure when the circulation in the lungs is interfered with. The pulmonary circulation provides a regulating reservoir for the blood; and here the effect of blood letting is felt first and most intensely; especially is it appropriate in arteriosclerosis, possibly because of reduction of the viscosity of the blood. Hahn experimented on himself; and found blood letting to induce a feeling of agreeable lassitude, an outbreak of sweat and somnolency. In a patient who was a hard drinker, incipient pulmonary edema in severe heart disease; as also in a case of emphysema and secondary weakness of the right ventricle was this procedure beneficial.

Non-Valvular Heart Affections.—J. G. Cecil (Louisville, Mo., Jour. Med. & Surg., June, '08) believes that much of the treatment usually resorted to in heart affections is misapplied, if not really injurious and contraindicated—especially the indiscriminate use of heart tonics and stimulants. For oedema, dyspnoea and irregular beat digitalis, if used at all, must be most carefully watched; strychnine should be given in doses not exceeding 1-60 grain. Overstrain should be avoided, as also overwork and excitement, both mental and physical; to relieving the heart of all extra work so far as possible, and to favor this overeating and drinking is prohibited. All the emunctories must be kept in action and rest and gentle exercise imposed.

The Rhythmic Action of the Heart, believes S. R. Benedict (Am. Jour. Physiology, June, '08) depends on a certain degree of tonus; and the reason why a latent period is observed when a strip of turtle's heart is placed in a solution of sodium chloride is that time is required by the strip to reach the requisite degree of tonus. It is not caused by lack of calcium ions or of available oxygen, nor to asphyxiation. The tendency of opinion is now against Langendorf's hypothesis, that the products of the heart tissues over metabolic activity constitute the stimuli to rhythmic contractions. It seems also incorrect to assume that oxygen and calcium compounds act by favoring oxidation. Under certain conditions non-electrolytes may induce a series of beats in ventricular tissue. The anion probably plays an active role in the action of

salt solutions on heart tissue.

The Everyday Fight on Consumption.—G. Homan (Jour. Missouri State Med. Jour., St. Louis, June, '08) points out what has been done in exterminating typhus, scurvy, leprosy, smallpox, etc. A century ago the fact that a person's face was not pitted from smallpox was used as a mark of personal identification and mentioned in official descriptions; to-day the presence of pitting, not its absence, is the remarkable feature. The coming generations of school children should receive systematic education in intelligent prophylaxis against tuberculosis; thus, in time, would our official and legislative servants be compelled to note ample means of preventing the cruel and needless waste of life now prevalent.

Six Hundred Cases of Anesthesia.—H. L. Springer (N. Y. Med. Jour., June 13, '08) concludes that ether and chloroform are apparently the most satisfactory anaesthetics; ether is safer than chloroform, but under certain circumstances when chloroform is desired, the risk may be materially lessened by giving oxygen with the latter; the average patient was ten minutes becoming anaesthetized, and it required two and one-half ounces of ether to obtain this condition; the average length of time of the operation was one hour and a quarter, and it required five and one-half ounces for this time, or, in other words about six ounces were used during the first hour, and about three ounces for the second hour; whilst most of the evidence at hand points in favor of vomiting being due to a centric disturbance in ether anaesthesia, these records show a close relationship between excessive secretion of mucus and vomiting; in the treatment of accidents most dependences must be placed upon ammonia in the form of inhalation and oxygen; the more remote consequences of anesthesia, such as status lymphaticus, acetoneuria, acidosis, hepatic toxemia, and the like, must not be lost sight of, and general anaesthesia should be preceded by a thorough examination of the heart, lungs and kidneys.

The Calmette Reaction, states T. Christen (Penna. Med. Jour., June, '08), may cause, in a healthy eye: conjunctivitis, even chemosis and profuse secretion; phlyctenula and tubercles of the conjunctiva, especially in scrofulous children; keratitis, sometimes two or three weeks after installation. In a diseased eye: very extensive exaggeration in conjunctivitis; pains and great swelling in trachoma; severe complications, even loss of sight, in tuberculosis of the eye. The conjunctivitis following installation of Calmette serum is due not only to the hyperemia but to toxic and infectious effects, particularly in scrofulous patients. The reaction is most severe in tuberculosis eyes, even where the healthy eye is instilled. Children are more subject than adults to Calmette complications. This means of diagnosis is therefore to be avoided in every diseased eye, even after recovery and even in one healthy eye; avoid using it, if possible, in children, and during and before a treatment with the tuberculin injections. Do not repeat the Calmette.

The Survival of Typhoid Bacilli in Soil.—As far back as 1889, notes the J. A. M. A., Grancher and Deschamps showed that living typhoid bacilli could be recovered from a soil five months after it had been inoculated with a bouillon emulsion of these bacteria.

Robertson, by the frequent addition of culture medium, kept them alive in the soil for ten months. Lorrain Smith tried inoculating soil with an aqueous emulsion and found that, lacking the presence of the artificial culture medium, they lived a much shorter period; he found them to exist thus but twenty-one days. W. Mair studied primarily to determine the effect on the soil as a habitat for certain organisms, of sterilizing it by steam under pressure. The earth which he utilized was taken at a depth of three or four inches below the soil from the grounds of Queen's College, Belfast. It was inoculated with aqueous emulsions of the organisms and was kept under conditions of temperature, light and moisture as closely simulating its natural surroundings as possible. Under these conditions the typhoid bacillus was found present in a living state after eighty days, though there was no evidence that it was capable of multiplying and leading a saprophytic existence. The bacillus coli communis was found after much longer periods. Some of Mair's samples were shown to be rendered much less hospitable to the bacilli if they were previously sterilized in an autoclave. This Mair attributed to the development of some bactericidal substance. Of course different soils vary greatly in their suitability for the growth of various organisms, but the fact that it is possible for the typhoid bacillus to live eighty days in any soil under normal conditions suggests the danger from certain methods of sewage disposal.

Non-Puerperal Pelvic Infections.—H. J. Boldt (Am. Jour. Obst., April, '08) believes that all fallopian tube inflammations are caused by an infection, which is usually conveyed from the uterine cavity, seldom from the peritoneal cavity, except perhaps tubercular infection. It is seldom possible to differentiate a puerperal from a non-puerperal infection without also considering the case history, which may disclose important etiological factors. It frequently happens that the tubes cannot be palpated unless enlarged (we have always thought that there has been considerable imagination back of the tactus eruditus in these cases). Boldt, from an enormous and unusual experience, gives minute directions concerning the technique of palpating tubes and ovaries in the healthy and diseased states. He prefers to examine with two fingers when possible and advises the recto-vagino-abdominal touch when in doubt. Boldt considers well the diagnostic features of catarrhal and purulent salpingitis, hydro-salpinx, pyo-salpinx, pelvo-peritonitis, appendicitis, tubal moles, pelvic exudates, gonorrheal infections and tuberculosis.

Preservation of the Ovaries.—R. Peterson (Jour. Obst., May, 1908) has investigated 250 cases of hysterectomy which have been done during the last six and one-half years. He finds that at best 10 per cent. of all women regularly menstruating at the time of operation will be free from the troublesome symptoms of the artificial menopause after hysterectomy with removal of the ovaries; the percentage of cases with no symptoms after similar operations will be slightly more than doubled if some ovarian tissue be retained; the severity of the symptoms of the artificial menopause is much less when the ovaries are retained after hysterectomy. It is not necessarily true that the younger the woman the more she will suffer from the symptoms of the menopause after

hysterectomy with removal of the ovaries, the greatest percentage of suffering occurs in women operated upon between the ages of forty and forty-four; therefore it is not a good rule that ovaries should be removed from patients over forty when hysterectomy is done. The frequency and severity of the artificial menopause is not influenced in any way by the kind of hysterectomy performed, whether the ovaries be removed or retained. The severity of the symptoms of the menopause is practically the same after hysterectomies, with removal of the ovaries, for fibroid disease of the uterus and inflammatory disease of the appendages. Retention of ovarian tissue after hysterectomy cuts short the period after which patients usually suffer from the symptoms of the artificial menopause. The greater the amount of ovarian tissue conserved, the more will the symptoms of the artificial menopause be mitigated.

The Tachycardia of Tuberculous Disease, states J. Lequyer (Gaz. Med. de Nantes, Mch. 7, '08), is not especially characteristic and does not correspond to the temperature curve; it may exist in both acute and chronic tuberculosis. It may even precede the clinical symptoms. In some cases it does not supervene until very late in the disease. In many cases the pulse will be 100 and 110 with a normal or almost normal temperature. An elevation to 100 or 102 degrees may bring the pulse to 130 or even 140. Although accelerated, the pulse generally remains regular; arrhythmia supervenes early in exceptional cases, but frequently in advanced stages.

Psoriasis.—L. D. Bulkley (J. A. M. A., Feb. 22, '08) advocates a vegetarian diet in this disease, which is due to underlying constitutional diseases. Errors of nitrogenous metabolism are constant in the urine; and these must have their effects on the skin. Psoriasis, Bulkley has become convinced, has its foundation in abnormality in the passage of nitrogenous elements into and out of the body. He does not confine the diet exclusively to vegetables. Careful medicinal supervision is also required, with the use of drugs when called for.

Typhoid Fever.—J. H. Landis (J. A. M. A., May 2, '08) submits a routine treatment which has resulted in a mortality of 2.3 per cent in 303 cases of typhoid. Milk is practically the only food—in half-pint doses four times a day. Cold sponging is done only at rare intervals; in not one case was the cold bath used. Two grains of acetanilid was given whenever the temperature arose above 103 degrees; and the dose was repeated until the temperature was brought below that point. Alcohol is contra-indicated in all stages of the disease. Hypodermatic injections of ergot were effective in a number of cases of severe headache.

Cancer and Tuberculosis.—H. D. McCulloch, in this work, states his belief that cancer is due to some external parasite which affects weakened (pre-disposed) individuals and can evoke a defensive reaction in the organism similar to that known to antagonize other diseases. This defensive reaction is, as a rule, inefficient in itself to overcome the morbid process. McCulloch holds that a "vaccine" to cancer is found in the lymphatic glands; and that a vaccine incriminously prepared in a living animal can be evolved by proper culture. Students of cancer should consider well its relations to the problems of immunity.

MISCELLANY

Toadstool Poisoning.—There were two deaths recently in the city of Rochester from this cause. A party of four had, while in Durand Park, picked a number of fungi, mistaking them for mushrooms, which they took home and ate. All suffered ptomaine poisoning from these, two who had eaten of them recovering.

A Medical Congress in August.—Amazing enthusiasm and devotion to science was displayed in the fifth session of the Pan-American Medical Congress which began its deliberations in Guatemala City on August . Whew! with the thermometer in the nineties in New York, what must it have been in Central America?

Impacted cerumen may cause pain and deafness (Am. Jour. Clin. Med.). We remove by warming a little hydrogen dioxide, pouring it into the ear while the patient is lying on a bed or table, and allowing it to remain for about five minutes. The external canal is then gently syringed with warm bicarbonate of sodium solution, when the plug will easily come away.

Lieut.-Col. Ammon A. Augar, a brave officer, who died recently, was the first man to volunteer for service in the yellow fever camp at Santiago in July, 1898; and his whole black regiment volunteered to nurse the patients. He was stricken with the fever and before he had fully recovered contracted next typhoid. He had subsequently several commands among negro troops and was devoted to them, as they to him.

Dr. Koch is to be a delegate to the International Congress on Tuberculosis which will be held in Washington from the coming September 21 to October 12. He, with Dr. Martin Kirchner, medical adviser and councillor in the Prussian Ministry of Education and Prof. Wilhelm Oliver von Leube, will lead the German delegation of thirty-five members. Dr. Koch, moreover, will especially represent the German government.

The Ginning Establishments of Egypt are said to employ rows of girls, women and children in a "choking gray fog" of dust, which they breathe from six in the morning until nine at night; in some mills their miserable pittances are fraudulently discounted or embezzled, and the profit from the "sweated labor" amounts to about 25 per cent. It would seem that an application of the New York or Massachusetts child labor laws is sorely needed in Egypt.

"Health is a man's birthright; it is as natural to be well as to be born," states Pyle (Manual of Personal Hygiene). Disease and the tendency to disease arise from ignorance and the transgression of physiologic and hygienic laws. "Yet to-day so tardy has been the recognition of the importance of instruction in the fundamental principles of applied hygiene as a means to complete living, that a thoroughly well person after middle life is the exception in every community."

The Nature and Causes of Taint in Miscured Hams.—E. Klein (Lancet, June 27, '08) has found a microbe which he has named the bacillus *foedans*. It is an obligatorily anaërobie, which is found with the

taint which occasionally affects hams during the curing process. Its length is 3.5 microns, but this varies from 1.6 to 1.4 microns; its thickness 0.4 micron. It is straight or curved, its ends are more or less rounded; it is not mobile, but forms linear chains and filaments.

Sir John Banks, the celebrated Dublin physician, who died recently, wrote in 1868 the famous article on "the writ de lunatico inquirendo in the case of Jonathan Swift, Dean of St. Patrick's, with observations," in which was established from legal documents the fact that in August, 1741, Dean Swift had been found, after inquiry by duly appointed commissions, to be "a person of unsound mind and memory and not capable of taking care of his person and fortune." And this of whom excellent critics have held to be the greatest of all masters of English prose!

The Psychology of Broken Jaws.—Dr. D. B. Breundlich (N. Y. Med. Jour.) notes the frequency with which broken jaws are presented at free institutions on and immediately after St. Patrick's, election and New Year's days and the glorious Fourth—the result of quarrels among the very lowest of classes. Dr. Breundlich has been surprised that the number of broken jaws has not increased by reason of the heated newspaper discussions on various topics which now prevail; "were it not for the mouth nine-tenths of the gossip and the mischief of the world would be prevented; and very often were it not for the mouth there would be no broken jaws."

A Legal Code of Ethics.—It may interest our colleagues to compare our medical codes with that which the American Bar Association has recently put forth. The lawyer evidently may advertise himself little more than the doctor. The publication or circulation by the former of ordinary, simple business cards is declared not to be improper, it being a matter of personal taste or local custom and sometimes of convenience. On the other hand the solicitation of business by circulars or advertisements or by personal communications or interviews is denounced as unprofessional; and the custom is condemned of indirectly advertising for business by furnishing or inspiring newspaper comments concerning the cases in which the lawyer is engaged or the manner in which the litigations are conducted and the magnitude of the interests involved.

Dr. Benjamin Rush, a signer of the Declaration of Independence from Pennsylvania, was one of the most distinguished practitioners of his day. The state of medical ethics was then somewhat in need of brushing up, if we may judge from the following: "My class consists of 106 pupils inclusive of my apprentices. It would have been larger had not Dr. Shippen persuaded several young gentlemen to attend Kuhn in preference to me. To effect this he not only extolled Kuhn's learning and sagacity in strong terms but spoke with great illiberality of my principles and character in medicine. It is thus he pays me for nearly curing his son of a pulmonary consumption by 25 bleedings after he had been deserted as incurable by Kuhn." A somewhat cryptic observation of Rush was to the effect that "as pulmonary consumption is the chronic state of pneumonia, so madness is nothing but the chronic state of pleurisy."

FEMALE LABOR AS A FACTOR IN SOCIAL LIFE.

BY A. L. BENEDICT, A.M., M.D.

MANY phases of social life depend more or less directly upon the entrance of women into active industrial competition with men. It is well to begin a study of this problem with actual statistic knowledge, which, in the present instance, is drawn from the U. S. Census of 1900.

It may be stated as a corollary that the evil of child labor is by no means so great as the proper agitation to correct such abuses as do exist has led many persons to think. A little over 10 per cent. of the total population is included in the 5-year period between the ages of ten and fourteen, inclusive, there being about 8 million children, of these ages, nearly equally divided between the two sexes. About 1 boy in 6 and about 1 girl in 16 is at work. Nearly nine-tenths of the boys and eight-tenths of the girls, who are employed, are on farms, rendering domestic service in homes, doing errands, etc. To these occupations, under proper conditions, no objection can be raised. More than half of the boys and almost 60 per cent. of the girls, who are employed, are included in the last two years of the age period mentioned. Thus, the objectionable factor of child labor is relatively small and will probably be remedied by legislation with regard to labor in textile factories, mines, quarries, etc., before the next census.

It is also a favorable feature that the unemployed male adults are few in number, averaging less than 5 per cent. for all ages between 21 and 54.

In spite of the popular impression, we are still far from being a nation that forces its women to work. Counting the female population over 10 years of age, in each group as 100 per cent., 40.7 per cent. of negroes, 21.7 per cent. of native whites born of foreign parents, 19.1 per cent. of foreign-born whites, and 13 per cent. of native whites of at least two generations residence, are employed.

To a large degree also, female labor is a temporary condition; 68 per cent. of all female workers are single. Between the ages of 16 and 20, 32.3 per cent. of all women work, mainly performing light service, especially domestic. Between the ages of 21 and 24, 30.8 per cent. work and in the age-group from 25 to 34, the proportion drops to 19.9 per cent. and thereafter, steadily decreases.

It is important to know what proportion of female labor is voluntary, what proportion performed under good conditions and what proportion involves undue hardship reacting not only on the worker but upon society at large. This knowledge is not to be obtained from statistics but it is significant that occupations which would naturally be sought by persons of good circumstances invite few women, that occupations requiring great executive or severe manual labor are mostly confined to males and that, aside from such distinctly feminine occupations as domestic service, millinery and dressmaking and teaching, or purely artistic occupations, women are usually employed in occupations of a temporary nature, not interfering with subsequent marriage. About 93 per cent. of all women ultimately marry and only about 6 per cent. of married women, with living husbands, work. Thus we may conclude that, like men, most women work only because they have to, that few de-

liberately choose a life-long occupation to the exclusion of matrimony and that, on the whole, the conditions under which they labor, are fairly good.

It is a curious fact that none of the peculiarly feminine occupations are lacking in male workers. For instance, there are 4800 male "seamstresses" (sic). Conversely, there are at least a few women in every masculine occupation excepting apprentices for a few trades (but not excepting the trades themselves), soldiers, sailors and mariners, firemen in the police department (but not excepting other firemen and policemen), street railroad drivers (but not excepting conductors) and linemen. While one is shocked at finding women engaged in quarry work, mining, metal industries, etc., probably most such cases are confined to barely human foreigners or explained by the woman's rendering light assistance to some relative. However, one of my own patients, a very dainty, pretty girl, left domestic service to become a moulder on account of the higher wages.

Considering that good board and five dollars a week in cash can be obtained by any fairly strong and capable woman in domestic service, and that sustenance and small wages can be had by almost any woman who is not absolutely disabled and who has any vestige of womanly qualifications, little sympathy need be felt for those who continue in unwholesome occupations at starvation wages.

Sociologically, occupations for women come under two categories: (1) those which place the woman in competition with men, tending to diminish male wages and rendering it more difficult for men to support families, while, at the same time enabling the women to consider critically, an offer of marriage. (2) Those which are, for the most part, a tiding over of the period between school life and marriage or which are especially adapted to married women or widows compelled to support themselves and their families, but which do not prevent marriage or encroach on male employment.

The general classes of occupation recognized by the census are as follows:

Visiting Physician to St. Joseph's Hospital for Consumptives, etc.

Males employed given in first column, females employed in second column. The column headed masculine indicates, so far as could be judged, the number of females competing with males. The column headed feminine indicates the number of women engaged in occupations appropriate to women. For agriculture, this means the management of farms, dairies, vineyards, etc., but not ordinary hired labor, on the theory that a married woman whose husband was disabled or a widow might properly continue to conduct the business. The detailed statistics show that more than 235,000 widows and about 50,000 married women and only about 29,000 single women are engaged in these major agricultural occupations, thus supporting the theory. Actors, artists, musicians and teachers of art and music as well as school-teachers are included in the "feminine" professional occupations. Hairdressers, boarding and lodging-houses keepers and hotel keepers (because a small hotel is simply a boarding-house of a higher grade), hand laundresses, nurses, midwives, servants and waiters are considered in the feminine occupations of the domestic and personal service class. Dressmakers, milliners, seamstresses, makers of lace, embroidery, artificial flowers and corsets are included in the feminine occupations of the manufacturing and mechanical class. The figures in parenthesis in the feminine column for the class of trade and transportation indicates the number of stenographers, telegraph and telephone operators. The column of widowed, includes both kinds.

In referring to certain occupations, such as the ministry, medicine, veterinary surgery, dentistry, sa-

loon-keeping, mining, hunting, etc., as masculine, the writer expressly waives the intention of so designating the women engaging in them. Many forms of clerical labor are well and economically performed by women without any necessary deleterious influence upon them or interference with subsequent matrimony. But in general the standpoint has been assumed that female labor should be limited to such occupations as nursing, teaching, domestic service, etc., which cannot be so well performed by men and which do not, therefore, compete with male labor. This standpoint is by no means one of personal conviction. On the contrary, the writer believes that a great many men and women are unfitted for marriage, that each individual should have perfect freedom of choice and that women should not be handicapped in selecting occupations or in securing promotion, except by obvious consideration of propriety. Even in the last instances, the writer believes that every woman has the right to unsex herself if she wishes.

It will be noted that, for the entire working population, the ratio of males to females is about 4.5:1 and by eliminating all competition with essentially male labor, it might be made about 7:1. For the different industrial classes, these respective ratios are: agriculture, 10:1 and 30:1; professions, 2:1, with no appreciable change possible since less than one-tenth of the working women are engaged in masculine pursuits; domestic and personal service 3.5:2 and less than 4:2; trade and transportation 8:1 and infinity :1; manufacturing and mechanical, 4.5:1 and 10:1.

It is scarcely necessary to point out that these industrial classes do not correspond to social classes in which marriage is to be expected, largely among members of the same class.

Almost exactly half of the total female working population is under 25 years of age and about 70 per cent. under 35. The age limits of the majority of individual women in each occupation vary considerably, and about as would be expected, certain occupations being mainly those of young single women, others of elderly and largely widowed women while some of the professional occupations, especially, are almost literally life work. After the age of 35, the ratio of working males to working females is fairly constant and is about 8:1. This ratio may be taken to represent the general average of women not permanently provided for by marriage, including those who do marry but who are widowed, abandoned, or for whom the husband does not provide satisfactorily. About 92 per cent. of women ultimately marry if they live to the age of 40.

It is impossible to say to what extent female labor is the cause of this lack of support by men and to what extent it is due to choice of single life and to what extent it supplements, without especially interfering with married life and the rearing of children.

In so far as the distinctly modern tendency to female labor of higher intellectual grade is concerned, it may be said that there are only about 100,000 women of the age-group of 35-44, who are employed. Nearly 40,000 of these women are teachers, and this occupation is not a recent field for women nor one susceptible of undue increase, disproportionate to

the increase of population, nor one that can be satisfactorily filled by men, nor one that, in and of itself, aside from individual proclivities, prevents marriage. Thus, it is fair to assume that the so-called modern tendency toward higher female labor, involves a total of only about 60,000 for the entire country. There are over five million women in the United States of these ages, so that only a trifle over 1 per cent. of all women can be considered as affected by this tendency. By a coincidence, nearly the same ratio exists toward the total working female population.

At the same time, even this increment to the female working population is important in view of its representing a permanent life-occupation and having arisen in only one generation.

It must be acknowledged that there is a certain degree of hypocrisy in trying to shield women from the hardships and embarrassments to which they are liable as physicians, dentists, stenographers, clerks, merchants, farmers and horticulturists and attempting to limit their vocations to baking, sweeping, washing, scrubbing, nursing (unpaid or poorly paid) and teaching music, art or the ordinary primary and secondary branches.

At the same time, it is not mere male vanity but a serious consideration of the ultimate welfare of the race that seeks to retain women in essentially domestic occupations. Moreover, discounting individual and rather exceptional successes in professional and business life and analogous failures in domestic life, and making due allowances for social grade, capability of individual husbands and wives and similar varying factors, there seems to be no question but that from a cold-blooded, selfish standpoint, matrimony is better paid and easier than any other vocation in which women engage. The economic success of marriage as a vocation for women would be still greater if, without in any way departing from the sentimental and ethical factors involved, it were generally recognized as a business, to be carefully learned and to be carried on with punctuality, intelligence and devotion, such as would be shown by an ambitious nurse, physician, bookkeeper, etc.

Turning from the permanent to the more or less temporary Women workers, engaged in the so-called masculine occupations, we can divide them pretty sharply, even by individual kinds of labor, into those of young single women and those of middle aged and elderly women, largely widowed. Now while, for any individual case, we would like to see a family abundantly provided with interest-bearing investments to prevent the necessity of such labor, it is obvious that such a hope is absolutely futile as affecting any considerable part of the community. The only genuine wealth is that produced directly by human labor and interest-bearing capital is an impossibility except as a tax imposed by the thrifty few on the many. Thus, available employment for widows, or women whose husbands are incapacitated, is a general necessity and conduces to the general welfare of society by enabling the proper rearing of children, much more than it injures society by competing with male labor.

As has been stated, nearly one-third of all women work up to the 25th year and nearly 20 per cent. up to the 34th year. About one-third of this third is

engaged in domestic and personal service—more after the 25th year. Obviously, these women are mainly unmarried. There can be no question but that marriage is, to some degree, prevented or postponed and fecundity diminished, directly by the reason of employment of young women. In so far as improvident early marriages are concerned, this is rather a wholesome factor. Nor is the lessened fecundity to be deprecated, so far as it is due merely to lessened period of child-bearing unless marriage is so long delayed that purely physical changes tend to poor nutrition of the foetus and render delivery difficult and dangerous. The former opinion in favor of very early marriage has changed and, probably, the primipara between 25 and 30 years of age is much better able to bear children than the girl married before she is 20 and not significantly more liable to complications and delays of labor than the primipara between the ages of 20 and 25.

As has been seen, competition by women involves less than one man in ten. At the same time, the injection of even a small percentage of women in clerical positions certainly lowers the standard of male wages and affects, especially, the positions which would naturally be stepping-stones to higher fields of usefulness in commercial life. So, too, the considerable number of female operatives in factories not only lowers the male wage scale in these industries but involves various unfavorable hygienic and moral factors for the women and hence for society at large, especially with regard to the reproduction of the race under normal conditions.

On the other hand, wages, generally, are at a high point, so high, indeed, on the average for skilled labor, that they are necessarily fictitious; that is to say, there is not wealth enough in the country, even if equally distributed, to correspond to such a wage scale. Hence, the tendency has been to a commensurate raising of prices of staple commodities.

There is no question but that marriage is discouraged to a very large degree by the unwillingness of both men and women to establish families which they can not rear in a proper manner. But, by a proper manner, is meant a much higher standard of comfort and luxury than prevailed a few years ago, or than can be attained under present economic conditions by more than a small minority of the population. If young men and women were willing to start life as their parents did, very few would be unable to afford marriage, but they are not willing and, in general, neither are their parents that they should.

How far this ambition is dependent on female labor and how far it is independent of it or acts as an incentive to the entrance of women into gainful occupations, is a question. It seems unfair to assume that any large number of young women enter industrial life simply to have more spending money or better clothes; still more so to imagine that any considerable number of them are seriously influenced by novels and melodramas in which the heroine marries above her class. At the same time, it can not be overlooked that the entrance of women into business and professional life acts in a cycle to attract into the same life, not only women who would, under older conditions, perform menial labor but women

whose mothers would not have thought of working at all except in their own homes. Moreover, while labor of a higher grade brings poorer women into less intimate contact with the wealthier class than does menial labor, the conditions are so different as to be more likely to stimulate a false ambition, and thus to prevent or delay marriage and to cause an unwillingness to beget children. It must not be forgotten that, barring a mere snobbish prejudice, or the practical consideration of a liability to imperfect domestic skill, the woman who engages in a profession or business is usually more attractive to men than one who is an idler or who engages only in household and social duties.

A very important factor in discouraging home life is the enormous and progressive increase not only in the scale of living, but in the actual price of the simplest and most indispensable articles of household and personal use. This increase has, it seems to me, been caused by the general raising of wages and shortening of hours of labor. Barring means to increase the productiveness of land and to assist human labor; we can not increase genuine wealth except by increasing the average amount of labor performed by the individual. The true unit of value is not the dollar but the average day's labor. If we debase the latter, we necessarily debase the former or, in other words, increase prices as reckoned in dollars. In the adjustment, the income of the professional and small business class and that composed of non-manual laborers, fails to be raised correspondingly.

It may even be that, by debasing the standard of male labor, an actual compensatory demand is made on female labor. At any rate, the two phenomena have occurred *pari passu*.

Far more important than the ordinary conception of the social influence of female labor, especially in the higher grades, is the diversion of female labor from domestic to commercial channels. From 1890 to 1900, there was a decided though not large decrease in the number of women engaged in domestic labor for hire. Since then, statistics are not available but the operation of the law of supply and demand is fully as accurate an index of the progress of this decrease. Counting actual wages, diminution of hours of labor and efficiency, increased cost of food and increased demands for appliances of various kinds, domestic servants, washwomen, etc., cost just about double what they did 20 years ago. The ideal home of the average professional and small business man simply can not exist under ordinary conditions, including the normal incapacitation of the housewife by child-birth and the withdrawal of her services from housework to the care of children, unless additional help can be had. It is no joke but an intensely serious matter that the impossibility of securing hired girls or even of women for days' work in the home, is driving thousands of families of more than average but still moderate income, from houses into flats and from flats into boarding houses and hotels. The influence on the birth-rate is self-evident. So far as unmarried persons are considered, the same general conditions produce a vicious cycle. On the one hand, abundant facilities are available for the

concrete comforts of home without marriage. In my city a company advertises, even on its wagons, "Let us be a mother to you for seven cents a day," meaning that it looks after such minor domestic details as darning, mending and sewing on buttons. On the other hand, prudent young men and women realize that anything like a home in the old-fashioned sense is beyond their abilities except at a sacrifice of all social habits.

Nor does this lack of domestic servants affect only potential employers; it reacts also upon the working class. We cannot blame a girl for preferring to write slow shorthand and run a typewriter or to pack cereals or make paper boxes, rather than be some other woman's servant. But the domestic work, disagreeable as it was, admirably fitted her to be a thrifty and skilful housewife and even the restriction of her liberty kept her out of many moral pitfalls. I do not by any means believe that office or factory work necessarily implies extravagance, vanity and ignorance of the domestic arts, and certainly not immorality. Yet, in the aggregate, the older employment made better wives for the humbler class of workers.

The thousand female lawyers and seven thousand women physicians in the United States are only a drop in the bucket of the population. It is the lack of domestic servants and of domestic training that is disrupting our home life.

THE COMMONER COCCUS INFECTIONS.

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IN considering bacterial diseases, we must premise that they are all dependent upon at least two factors: the presence of the bacterium (the essential or specific cause); and the predisposition. These considerations are now so well understood that they have but to be stated without amplification. Certain other things, however, are perhaps not so readily taken into account. The same germ, for example, may produce diseases that have entirely different clinical manifestations; and on the other hand, a disease clinically well defined, may be produced by different germs. The streptococcus is responsible for pus, erysipelas, septicaemia, pyemia, lymphangitis, pseudomembranes, gangrene, visceral inflammations; and in broncho-pneumonia, a well-defined disease entity, may be found strepto-, staphylo-, and pneumococci, pneumobacilli, colon bacilli and others. However, as Roger well points out, the situation does not here differ from that observed in other pathological conditions, notably such as are the result of poisons. Alcohol produces drunkenness, delirium tremens, hob-nailed liver, pachymeningitis, peripheral neuritis, etc. It is always the same poison, but active under different conditions; on the other hand the manifestations here attributed to alcohol may also be referable to other and most diverse toxins; lead, for instance, will, as well as alcohol, occasion peripheral neuritis. We must also consider the possibility of "mixed infections;" tuberculosis, for example, in which only the tubercle bacillus is in evidence, is hardly to be considered a serious disease; but when to the tubercle bacillus is added various other germs,

especially streptococci, the grave manifestations of advanced tuberculosis begin to present themselves. We must again (as I expect to emphasize later) distinguish between the bacterial diseases, and the coccal forms of which I shall devote this paper; and those due to infectious agencies in general. All bacterial diseases are infectious; but there are other infectious agencies than bacteria, such as the protozoa, fungi, pathogenic yeasts and animal parasites. The bacteria are vegetable parasites, multiplying by fission; schizomycetes, belonging to the family of algae. Asking the reader to bear these reservations in mind, I beg now to consider briefly, and as much as possible consecutively, the commoner coccus diseases:

The staphylococcus (which appears in "grape clusters") is the commonest pus producer in man, states Ricketts,* to whom I am indebted for a number of the data contained in this article. The most frequent infections are those of the skin, the organisms gaining entrance through the hair follicles rather than through the sweat ducts; thus result such conditions as acne pustules, abscess of the skin and subcutaneous tissue, impetigo, furuncles and carbuncles; staphylococci are considered by some to be important as a secondary agent in eczema, although this skin affection has generally been held (and I believe rightly) to be essentially non-microbic. One may produce abscesses experimentally by the injection of minute amounts of staphylococci; somewhat infrequently it is found in purulent or sero-purulent conjunctivitis. Cryptogenetic invasion by the staphylococcus is spoken of—instances in which the port of entry has not been discovered, though undoubtedly there has been such entrance. Primary staphylococcal infection of cavities communicating with the surface, as the antrum of Highmore, the middle ear, nose, bronchi, lungs and a tuberculous cavity, are not uncommon; mixed infection with this coccus is indeed the rule in such cavities, regardless of the primary cause. But staphylococcal infection of the mucous surfaces is less common than of the skin; and this coccus is of itself alone rarely productive of aphthous inflammations, anginas, pneumonia, enteritis and cystitis. This germ is to be found as a secondary micro-organism in measles, scarlet fever, influenza, smallpox, typhoid fever and tuberculosis. Virulent staphylococcus septicaemia sometimes follows primary infection of other parts of the body, as wound infection, tonsillitis, rarely puerperal infection, and the so-called malignant carbuncle of the upper lip; in such instances a thrombophlebitis may be the means by which the organisms are poured into the circulation in large numbers. Serous inflammation (pleural, peritoneal and endocardial) are rarely primary, but follow systemic infection; the endocarditis usually is ulcerative and leads to metastatic foci of infection. Staphylococci have a peculiar affinity for bone tissue, especially marrow and periosteum; they are the most common agents in the production of osteomyelitis and "periostitis aluminosa;" they are considered to persist for years in bone lesions, and later to start up a fresh process. They involve the joints less frequently; but have been found, presumably as secondary agencies, in acute rheumatism and as the primary cause in pyemic joint

*Infection, Immunity and Serum Therapy.

abscesses. They are sometimes found in abscesses of the mammary and parotid glands, of the liver and lungs, and rarely in pyorrhea alveolaris. Previous infections by many organisms, and likewise by traumas, predispose to localization of the staphylococcus; and any infectious process in the skin is likely to be invaded by these organisms separately. Infections with the staphylococcus are characterized by both local and general leucocytosis, the local leucocytosis being a part of the suppurative process. The inflammations to which the staphylococcus give rise are in the form partly of simple serous exudation and infiltration, partly of cellular infiltration with secondary suppuration. Staphylococci may appear equally in mild forms of acute articular rheumatism, in benign endocarditis, in "rheumatic pleurisy;" or in such grave diseases as pyemia and septicaemia.

Streptococci (which appear under the microscope in chains) vary widely in their pathogenicity according to their own morphological conditions, the degree of resistance in the human tissues, the locality invaded by them, and the like. They are the most frequent cause of wound infections, of lymphangitis; of cellulitis (diffuse inflammations of the subcutaneous and intermuscular connective tissues); endometritis, puerperal septicaemia, endocarditis, and tonsillitis; they are often the exciting agencies in pneumonia (usually the lobular form); bronchitis, meningitis, serous inflammations (pericardial, pleural, peritoneal and of the joints); enteritis and suppurations of the middle ear. They are the exclusive cause of such erysipelas as occurs naturally; and they have been held to be etiological factors in scarlet and rheumatic fevers. They are the most common organism found in the lesions of impetigo contagiosa, which may however contain also other germs, especially the staphylococcus. They occur in the mixed infections of pneumonia, tuberculosis, scarlet fever, enteritis and other processes; when their presence indicates grave and often fatal complications.

Not all streptococci are able to cause erysipelas; nor is a streptococcus cultivated from a case of erysipelas able to cause the disease in all individuals. This is a natural enough conclusion to be taken into account with regard to all infections; we know full well that tissue resistance protects many against the infection to which others will succumb under precisely like circumstances of exposure. Cultures from other sources, such as phlegmon, may produce erysipelas; and Koch has produced an erysipelatous inflammation with the staphylococcus. Possibly streptococci which produce erysipelas rather than some other process, do so because of some peculiarity in their virulence or in the individual's resistance, or both; also that this type of inflammation depends on some peculiarity in and beneath the skin of the susceptible. The conditions are obscure, the infection a trium not always known; the infection is in most instances through a wound, although the a trium may not have been discovered; in facial erysipelas it is probable the entrance is generally through the nasal mucous membrane—possibly through the ear; the cocci lie principally in the lymph spaces and interspaces of the connective tissue; they are rarely to be cultivated from the scales or the fluid of blisters, but may be obtained in skin excised from the border of

the inflamed area; they are probably not excreted through the unbroken skin; the erysipelatous lesion is an inflammation of the superficial lymphatics. The onset is with chill and very high temperature (often pyrexia), and headache, pain in the extremities, vomiting, obscured psychism and other symptoms of profound general intoxication. Locally there is redness, swelling, painfulness progressive (wandering erysipelas) over face, scalp and neck. The skin lesion is circumscribed by a well-defined raised border; and it may become the seat of vesicles and gangrene.

In lymphangitis the streptococci have invaded the deeper lymphatic structures. There is thrombosis of the lymphatic vessels, congestion of the adjacent blood vessels, as evidenced by reddened streaks; there are metastases in adjacent lymph glands; the infection may become general. Thrombosis of the adjacent vessels may then occur—perhaps the first step in the production of pyemia with multiple points of infection. Cellulitis may, moreover, be caused by the staphylococcus alone; or infection with the latter may be superimposed as a primary streptococcic cellulitis.

Streptococci are perhaps the most important cause of enteritis in children; the inflammation is often membranous and is accompanied by desquamation of the epithelium and by hemorrhages; peritonitis and septicaemia not infrequently follow. Virulent organisms probably oftentimes reach the intestines through milk, digestive disturbances from other causes predispose; the organisms are nearly always present in adult intestines, but they then cause inflammation less frequently than in children.

Streptococci are occasionally found in the normal vagina; though this tissue is not a good culture medium for pathogenic agencies; in multipera these germs are more frequently found; the vagina tends to purify itself mechanically and by its acid secretions; but when these secretions become alkaline as in catarrhal conditions, or when the vagina contains blood and serum (which provide a congenial culture ground) virulent streptococci proliferate. Infection takes place through denuded surfaces and tears; endometritis, metritis, perimetritis, salpingitis, peritonitis and sepsis may follow.

Streptococci are always no doubt present on the tonsils, the buccal mucous membranes, oftentimes in the sputum and not rarely on the nasal mucous membranes. They probably proliferate under any inflammatory condition, finding in the tending serum and plasma a medium favorable for growth and the development of virulence. They are present in the mixed infection of diphtheria and scarlatina; and they tend to grave conditions when the general vitality is lowered, as in typhoid and like diseases. Alone or in conjunction with the diphtheria bacillus they invade the lung, causing broncho-pneumonia; as in pneumococcus infection they, upon having become lodged in the pharynx, reach the bronchi and perhaps the alveoli by extension along the surface. They increase the virulence of the diphtheria bacillus. Injuring the tissues locally they penetrate beneath the membrane into the tissues and they take part in the formation of the membrane. On entering the circulation they injure various organs, especially the

kidneys. There are usually the essential germs in follicular tonsillitis; and are frequently found in alveolar abscess; in both instances they may be mixed with such other organisms as the staphylococcus and pneumococcus. Beginning primarily with the nose, tonsils or pharynx, streptococcus infection may extend to the adjacent sinuses, the middle ear, meninges, or may by way of the tonsils cause systemic infection. Streptococci are very likely to be responsible for vegetative endocarditis; the lesion may also be ulcerative and may result in septic infarcts or metastatic foci. Infarcts from streptococcus endocarditis are, however, not always infected; or the vegetations contain staphylo- as well as streptococci. Acute endocarditis is observed in some twenty per cent. of cases of rheumatism for reasons presently to be noted. There is fibrinous inflammation of the endocardium and of the valves in consequence of the lodgment of the cocci; there then develop murmurs, heart dilatation, insufficiency, or obstruction or other familiar sequelae.

Many organisms have been described and cultivated from the joints, blood, endo- and pericarditic lesions and from the tonsils in acute articular rheumatism—the "monadenen" of Klebs, the short bacilli of Wilson, strepto and staphylococci, and a bacillus resembling that of anthrax; of these the most frequently present has been the streptococcus. Lesions characteristic of rheumatic fevers and also of arthritis and endocarditis have been produced in rabbits by the inoculation of pure cultures of a diplococcus, which cannot be distinguished from the ordinary streptococcus pyogenes by cultural tests. Virulent streptococci from whatever source have a predilection for serous surfaces, as is evident from the frequency with which the joint, endocardium, etc., are involved in streptococcus septicemia in the human subject. Some believe that acute articular rheumatism is simply one of the many manifestations of streptococcus invasion; and, this would seem (tentatively) to be the case when we consider the frequency with which streptococcus tonsillitis begins the disease. Acute articular rheumatism occurs typically in attacks of from five to eleven days' duration, with intervals of about the corresponding length. Besides the tonsillar onset, there may have been intestinal inflammation, perhaps indicating that the streptococci portal of entry has been in that region. A chill and the pronounced fever follow. No doubt the hyperperexia of rheumatism is due to unusually virulent coccal invasion. The joints and the extremities successively undergo swelling; and severe pain is manifested in the slightest movement. Perspiration is profuse; frequently there are eruptions (urticaria or erythema). After a period free from fever and pain there is apt to be a repetition of the symptoms. Similar cycles are repeated, according to the severity of the infection, in the course of which endocarditis, or pleurisy or other concomitant inflammation may arise. In acute "rheumatic" pleurisy there is serous exudation into the pleural cavities, due to the dissemination of the cocci; a grave pericarditis may also thus result. There may be "cerebral rheumatism" with hyperpyrexia and delirium followed by collapse. The acute attacks of rheumatism is likely to have for its sequelae subchronic

and chronic forms, with thickening of the joints, stiffness and pain; and other serious lesions, as suggested, may develop in various organs and tissues.

Septico-pyæmia has for its point of invasion injuries (sometimes neglected) with consecutive inflammation of veins and lymph glands. Thus an external wound, a gonorrhoea, an inflammation of the middle ear or a pleurisy may be a focus of infection. Staphylococci and streptococci are generally present; but other micro-organisms may appear as well. When the focus cannot be demonstrated with certainty we speak of the infection as cryptogenetic.

This serious disease begins with a severe chill, vomiting and great prostration. The fever is irregular and high and the pulse frequent. The spleen is enlarged and sweating is free. The sensorium is obscured and a typhoid state may develop. Repeated chills occur, together with hemorrhages into the skin and the mucous membranes. Abscesses form in glands, lungs, kidneys, liver, spleen, etc. (pyæmia), as local manifestations, in addition to symptoms of general intoxication (septicaemia). Generally there exists hemorrhagic nephritis. There may be further purulent or serous pleurisy, pericarditis, meningitis or ulcerative endocarditis. The last of these lesions may be the source of new metastatic embolic infections.

No one organism is the exclusive cause of any given type of pneumonia, except perhaps the infective agencies of syphilis and tuberculosis; but the diplococcus pneumonia (of Fraenkel) is the active agent in most cases of lobar pneumonia. These cocci are arranged in pairs, are biscuit shaped and are surrounded with a mucous capsule. They may appear in other diseases than pneumonia. The morbid process excited by them consists in the extravasation of a fibrinous exudate into the alveoli; and this exudate subsequently undergoes coagulation. The disease generally begins abruptly with a chill, high fever, pain in the side and cough. The fever is continuous. The spectrum is bloody, viscid and rust-colored. There is marked leucocytosis and the spleen is enlarged.

The pneumococcus is present in the nose, mouth and pharynx of many individuals; it is found more frequently in crowded urban than in country districts; it persists for weeks or months in the mouths of pneumonia convalescents, and it reaches the mouths of those who have been in the vicinity of sufferers from this disease. It is found in the conjunctiva; and occasionally in the deeper air passages. It may apparently reach the stomach and intestines with the sputum; and it has been found in the digestive tract as the cause of diphtheritic enteritis, a condition which may be followed by pneumococcus peritonitis or general infection. The lungs are infected by inhalation of the cocci; suspended in droplets of saliva, or mucus or adhering to foreign particles, they may be carried deeply into the bronchial tubes. Two factors would seem to prevent their being carried to the alveoli by currents of inspired air. In the first place foreign bodies or infected droplets are likely to strike and adhere to the walls of the respiratory passages before they have traversed a great length, and from this situation may be carried out again by coughing or by ciliary action;

moreover, the tortuous passages of the nose and its hairs, and moist surfaces arrest many germs. In the second place the velocity of the inspired air is greatly reduced or abated by the time the particles might have reached the alveoli, a condition which renders their arrest all the more probable. We might observe in the third place that pulmonary respiration is generally tidal, that it is dependent upon the law of the diffusion of gases, that the air inhaled in one inspiration does not in that one inspiration reach the alveoli. Nevertheless pneumococci do reach the alveoli, no doubt (in my opinion) by way of the lymphatic channels; some believe that even in health they are carried thence more or less constantly, and are as constantly destroyed. Sometimes they have been found in the lung parenchyma of those who have died of other than pneumococcal infections or of non-infectious diseases. Blood infection is also considered the channel by which the pneumococcus is conveyed to the alveoli; that this is possible is shown by the occasional occurrence of pneumonia secondary to pneumococcus infection in other parts of the body. Pneumococci have in many cases been found in the blood; this fluid is probably infected in all cases at some stage of the disease; one thus readily understands the frequency of pneumococcus infections in other organs as complications of pneumonia, pericarditis frequently, the peritoneal cavity by way of the diaphragm, with general peritonitis as the occasional result; endocarditis, meningitis, arthritis are frequent complications; there may develop conjunctivitis, otitis media, cutaneous or subcutaneous infections, intramuscular abscess, osteomyelitis; the kidneys and liver usually show acute degenerations. The diplococcus complicates typhoid fever, diphtheria, tuberculosis, influenza, erysipelas and other infections, the organism of the primary infection being also found in the lungs. The pneumococcus may be an exciting cause of pulmonary hemorrhage in the tuberculous. Complicating infections by the pneumococcus may occur by way of the lymph channels, as in pleuritis, pericarditis and peritonitis; by continuous extension as in infection of the bronchi, nose and perhaps the middle ear; or as metastatic infections following the invasion of the blood stream by the organisms. It is undoubtedly in the latter manner that meningitis, endocarditis, arthritis, and muscular and subcutaneous abscesses arise. Pneumococcal invasion occurs independent of the existence of pneumonia; as in alveolar abscesses, conjunctivitis, dacryocystitis, serpent ulcer of the cornea, middle ear inflammation, meningitis, enteritis, rarely peritonitis and pneumococcus septicæmia. There may be a pneumococcus meningitis either sporadically or in epidemic, although the meningococcus is a more frequent cause; the organisms may enter through the middle ear or nose, or through the circulation from a primary and perhaps undiscovered focus in another organ; there may have been a pneumococcal rhinitis; and the lymph channels may carry the germs thence to the meninges. The blood may be infected secondarily; such a meningitis is almost invariably fatal; the pneumococcus causes chronic meningitis less frequently than the meningococcus. A pure idiopathic pneumococcus infection of the peritoneum is very rare; but peritoneal infection may follow a primary intestinal infection. Pneumococcus

conjunctivitis occurs in epidemic form; and the same precaution should here be taken as in the influenza form.

A number of bacteria may produce epidemic cerebro-spinal meningitis—the meningococcus (*diplococcus introcellularis meningitidis*), the *diplococcus pneumoniae*, the *streptococcus pyogenes*, the *staphylococcus pyogenes*, the *bacillus influenzae*, the *C. typhosus*, the *B. coli communis*, the *C. Mallei*, the *C. pestis*. The first two among these, in addition to causing sporadic cases, also produce epidemics of so-called primary meningitis. The lesion caused by the other germs mentioned is usually secondary to some other suppurative focus; and are likely to occur during the course of the diseases caused by the respective microbes. The meningococcus closely resembles the gonococcus in that it is found in biscuit-shaped pairs, nearly always within pus cells, and does not stain by Gram's. The inflammation though spoken of as primary, is usually secondary to some other acute process in the nose, the middle ear or in the accessory sinuses; the meningeal inflammation is always cerebrospinal in its distribution and the exudate, which is purulent or fibrino-purulent, contains the diplococcus (meningococcus) in varying quantities. Diagnosis may be established by means of the lumbar puncture. Acute encephalitis, bronchitis, lobar pneumonia, and arthritis have been complications, in which germs at least resembling the meningococcus have been found; these complications probably arise by way of metastasis, the blood stream being the channel. The disease, a most dreadful one, sets in with considerable abruptness, with severe headache, vomiting and chill. There may, to begin with, be a short period of general malaise. The symptoms become rapidly aggravated. Herpes (blisters or "vesicles") appear upon the lips, the fever is high and continued and leucocytosis is marked. Stiffness and intense pain upon movement appear in the muscles of the neck and back (from irritation of the spinal nerve roots), so that the patient may raise his back, forming a bridge (*apisthotos*). Consciousness is obscured. Delirium, convulsions, paralysis and hyperæsthesia occur; and later profound coma, twitching, retention of urine, constipation and Cheyne-Stokes breathing. The last of these symptoms is manifested as follows: the breathing is irregular. There will be at first, a complete pause in the respiration, and this will be succeeded by feeble breathing gradually becoming stronger, then gradually abating, and finally ending in another complete cessation of the respiration. During the cessation the patient becomes more comatose; during the hard breathing he recovers somewhat. Death may take place within twenty-four hours.

With the gonococcus of Neisser we are all familiar.

I have thus in the most fragmentary way considered the coccus infectious; I have not essayed to discuss them exhaustively. I wished but to indicate the manner in which the disease due to these micro-organisms arise; and especially to note that for almost no one of the diseases considered is a single micro-organism responsible. The processes are considerably more complex than would at first thought appear.

OUR SKIN HABITATION.

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OUR skin is the most expansive organ of our bodies. It is no metaphor of idea—it is a truism of physical and nervous condition—we are the inhabitants of our skins—our skins are the vital habitations of our existence while in the flesh. A simple proposition at surface glance, but a profound and persistent fact that no intelligent mortal can sensibly controvert. In ordinary estimate, the skin of the human body is classed as nature's outer coat to cover muscles and viscera, also to accommodate whatever clothing we choose to wear for civil decency, for animal comfort, for visible adornment. But on its physiological basis of function the skin is the sensitively animated reciprocator of the exquisite service performed by every other organ and tissue of the body—at once the masterly guardian of the human organization with which it shares its reciprocity and unity of physical welfare.

Peel the living bark away from the growing tree and the tree is dead. Destroy the expansive integument of our bodies by scald, or by burn, or by denuding blade, and life of the body itself has vanished. The delicate anatomy of the skin is described in detail in our text books; but the great conservative mission of the skin as a promoter and protector of health and vitality is seldom fully recognized or appreciated, although its importance as a medium of physical welfare is essentially represented in the regulative economies of systemic construction. As already suggested, the skin is the expanded organ of equation to every other organ of the body—the working counterpart or external complement in temperature, in circulation and nervous impress of the magnificent machinery of mankind. Its healthfulness is the spontaneous measure of human beauty. Its illness or disorders proclaim to sight the unsavory condition of the blood that unfurls upon the surface not merely the slight but also the more obstinate and frequently most painful and repulsive demonstrations of befouled humors that have become vagabond tenants of the corpuscular circulation.

The temperature of the skin is an index of the status of the entire body. What we call a hot skin, with accelerated pulse or heart action, signifies a febrile condition, and fever is the universally recognized insignia of abnormal and embarrassed situation. For the time, if the skin is dry, its sanatory functions are suspended so long as the system remains locked amid the arid drought of burning debris in the body; but when the febrile tension abates by reason of the skin's resumption of its sanatory office, as manifested by the process of washing out injurious impurities through the million avenues of free perspiration, a genuine and gratifying relief is experienced. Often indeed is the skin the mediator between life and death, because of its eliminative agency in disordered conditions. The excretion of worn out, also of diseased, material is as important as is the office of nutrition for the support of vitality. The same blood that conveys ~~decaying~~ ^{decaying} and vitiated

elements to the other organs of the economy, also conveys its burden of impurities to the cuticular surface which is actively and faithfully engaged in its organic service of extended means of purification second to none in availability unless it be the draining function of the great intestinal tract for the removal of toxic elements from the body.

An equalized warmth of skin indicates normal vigor of circulation. Coldness or cold condition of the surface and extremities, as may be noticed by the touch of a warm hand, is the local evidence of repulsed or deficient circulation in those parts with corresponding congestion and sluggishness elsewhere in the body. The persons with cold portions of skin may not confess to any feeling of coldness—may not realize the deficient activity of surface circulation—but will complain instead of pains and discomforts in other parts, for which they claim their need of medicines for relief, but which might be naturally averted if the body was so clothed that an equalized temperature could be maintained. An excess of clothing over one part and meagerness over another part naturally result in deranged surface temperature, in disordered nervous impress, in disturbed and distorted sensations somewhere equivalent to the discomforts of a diseased condition which medicine can but temporarily relieve. Why? Because the error of allowing some parts of the body to go abnormally cold is persisted in usually as a fad or fancy. For a year or two women have affected bare arms, or short open sleeves that allowed cold air to drift over the arms to the shoulders, many disdain ing underwear intended to prevent excessive waste of natural body warmth, while the outer house dress, even during winter, is of flimsy texture suitable only for wear on summer days. The fugitive neuralgias, the aching gnaw of sub-acute rheumatic irritations, the husky coughs, chest aches, habitual chilliness are worrisome appeals for an equalized general warmth of the cuticular surface, and consequent relief of increased elimination by the skin. I have just received a message of thanks from a lady in midlife who has taken a fancy to wearing thin lawn with short open sleeves winter and summer alike for her home wear. She has been complaining of rheumatic pains shifting from part to part from head to feet. A few weeks ago these pains sought her stomach, especially when lying in the prone position. Our weather was see-sawing between ninety-six degrees hot to fifty-six cold and back again. She made no corresponding change in the warmth of her person. Her arms were cold to the touch even to her shoulders. The pains in her stomach became so severe that sinipisms were resorted to externally. Their relief was transient. Abandoning other forms of remedies, I put her on ten-grain doses of sodium salicylate every two hours, washed down with free drink of water—a purely rheumatic remedy—with result that relief was prompt and positive; and hence the message of thanks. This lady also suffered nearly all summer with acute erythema on the inner sides of the thighs, which tormented her day and night. With a chilly skin in general and reduction of surface elimination, it seemed to me that the warmest part of her body received the blood-push of concentrated impurities with unusually distressful results.

A month of blood treatment, including syr. acidi hydriodici, also liq. potass. arsenit. in an average of five-drop doses after each meal—aided further with free and frequent external applications of sub nit. bismuth rubbed gently into the eruption by means of tufts of absorbent cotton, rather than with the fingers, the erythema was gradually subdued. Meats were interdicted. I then wrote out in detail for her study the reasons why she should bestow more considerate attention to keeping her skin evenly warm—and this gauged by the changes of weather.

This lady has an interesting daughter-in-law who also affects the lightest clothing and with practically bare arms. All her surface is abnormally cold. In our late rainy weather she complained of chilliness. But it being August, though the thermometer had dropped to fifty-six, she would not "bother" for a few days to change from her summer style of dress. Her skin has a firm underlay of fat. She says that she never perspires, though the weather may be very warm and her home exercise very active. Circulation of blood in her skin is sluggish, and without the function of perspiration the elimination of uric acid from the skin is relatively nil. She complains of continuous headache, which I believe to be of rheumatic character. Nature never intended that the kidneys should be the only media through which uric acid must be eliminated from the system. The skin and the kidneys co-operate in the removal of acid debris from the economy. This lady's skin is of low vitality. A touch of pressure against any object leaves a dark blue mark which requires several days for her circulation to eliminate. At present date she has been pestered for three months with a succession of acutely painful sores that developed in the inactive skin of her lower limbs—sores that begin as nodules of hardness that presently reach the surface as a pimple surrounded by a red areola, the centre of which degenerates through the subcutaneous layer of fat, until a small cavity is revealed; after which under the best treatment that my study has devised it has required nearly a month of time to heal, leaving as it does a red scaly surface that may not fade away for several months. For diplomatic reasons I denominate these persistent sores as being of scrofulous breed.

The responsive correlation of function between the skin and the kidneys is clearly recognized by the observation that when the process of perspiration is profuse, the volume of urine is diminished. But when perspiration is repressed by coldness of skin, then the flow of urine is markedly increased. Every mother knows that if the child has "slept cold" she may expect strong evidence of bed-wetting has occurred before morning. Much is written for the journals in reference to prescriptions for incontinence of urine in children. A pair of soft woolen blankets for their cot at night is more sensible than resort to benumbing doses of belladonna that we see recommended. Avoid chilling the skin of young children. On cold nights, if the child is lying upon a cold mattress and sheet, the mattress will draw away too much of the child's natural body heat and cause a chilled condition. Spread a blanket between the mattress and the child's body, and the warmed skin will materially relieve the tendency to exces-

sive urination in bed. Blanket covering is light and warm—entirely superior to cotton spreads except during hot weather. A normally active warm skin is a natural protection against internal congestions. To counteract the physical mischiefs of localized internal congestions, the medium of the skin is generally the first thing thought of, the purpose being to increase its natural heat, outside the part complained of, by means of irritating or stimulating applications or the use of hot water in rubber containers. To ward off death after severe operations by promoting diffused circulation of blood hot blankets are in readiness in which to wrap the patient immediately. A prolonged hot foot-bath, operating through the skin of the feet, is the well-known means of reducing congestion from chill, or relieving headache, of reducing muscle pains of legs or of back—the benefits continued by use of hot water bottles or bags to parts after the case is helped into bed.

The skin is a human house cleaner. Its function not only excretes unsanitary elements known as perspiration; it exudes from the circulation a material proportion of semi-excrementitious waste which would soon prove gravely detrimental to the economy if retained. Who asks for evidence? The fetid exude into a pair of foot hosiery that has been worn a week in warm weather without change will sustain the suggestion—a rub by the finger between the five toes on retiring at night seals the fact of what the skin there has eliminated from the body in one day. Again, the layers of scales over the surface of the body's cuticle—a compress of dead waste—a film of corpse encasing our mortal habitation of living flesh—an escape from which may be effected by a liberal rubbing with decent soap and water which uncaps the pores of the working skin—which releases the repressed nerve fibrils and arterioles from the impact of dead matter upon them—immediately wins for body and spirits an uplifting sense of lightness and life. The release of the skin from its bond of pasty debris by an active bath well done—not overdone—diffuses renewed exhilaration to the sense of existence. The soft whiteness of the lady's hand, such as man will adoringly lift to his lips and kiss, will become pasty and malodorous with the exudations from its beautiful skin if closely wrapped from the air ten days by a yard of muslin bandage.

Hygiene of the skin by means of cleanliness has become a popular vogue among intelligent people. About five years ago I became considerably interested in the teachings of a monthly named "Physical Culture," under editorial management of Benarr Macfadden—an enthusiastic writer and professional athlete of unusual force of vitality. It would prove small benefit to the world for humanity in general to exhaust itself in striving to make a race of athletes under the present guise and development of civilization. While two could win the ideal of bulging muscles eight would fail—and possibly the failures would live as long and accomplish as much in life as do the winners. Macfadden, five years ago, taught that "cleanliness is health." He argued that bathing to sensible degree accelerates the action of the pores of the skin, thus enabling responsive interior organs to keep busy in their elimination of local impurities. He also taught that heavy underclothing which keeps

the air from the surface of the body, lessens the hygienic activities of the pores of the skin and ultimately induces encroaching debility. As extremists usually outride their best horse, Macfadden furthermore advocates in the article now before me the venture to stand or lie for a long time in a cold draft without clothing to assist in the cure of a cold. By this I apprehend he means a season of complete ventilation of the eliminative surface of the expansive outside envelope of the body. A prominent physician of Boston, of whose friendly interest I am a grateful recipient, evidently enjoys opinions corresponding with those expressed by Macfadden. Men of such vigorous organization can safely indulge in the tests of vital energy which they describe and advocate. But persons of different type of constitution and experience cannot in the same rigorous manner rival athlete capacities. We take humanity as we find its capacities; but we may meanwhile help to correct many obvious errors within the limit of accomplishment by most.

Some years ago I had acquaintance of a noble type of wealthy gentleman residing in palatial residence on Fifth avenue, New York. He was extremely sensitive to the need of caution in caring for his health. Subject to neuralgia, "taking cold" was much dreaded, hence he confined himself carefully during winter to his warm rooms. The underwear that he wore was of the heaviest woolen that I ever saw. His strength prematurely failed him and a man of grand qualities passed into the beyond. In contrasting his valuable life with that of a comparatively poor man, one compelled to plain and scant clothing and cheapest underwear, who can barely afford enough fuel to make his house comfortable during the rigors of winter. He lives on and on, fumbles a dime each day for his beer, takes life less seriously, fills a truly indifferent sphere of usefulness as compared with the generous philanthropist who divided the mercy of his means with the worthy, but departed from the circle of his usefulness before he could be spared. Examples like these suggest that the abundance of heavy underwear that smother the skin do not add to the defense of health or prolong life. The opinion has been advanced that no underwear is needed—that the wind whistling up the trouser leg is more sanitary and invigorating. Bare legs inside baggy trousers may stump the state of hygiene for heroism, but heroes are born, not made by the valor of dress parade. An eccentric ex-mayor of Philadelphia in his day was a walking sensation on the street in our coldest weather by his gallant stride against the winds without the bodyguard of any overcoat; but that did not put clothing stores out of the overcoat business, nor did it make the hero the oldest or heartiest man in the Quaker City. Physical specialists with strong hearts and rich blood may safely affect exceptional hardihood. Sixty years ago, in the section of the country where I was raised, for increased warmth winter wear was lined; trousers as well as coats. The immense output of manufactured underwear was not yet in prominent vogue. Merchant tailors then began to make woolen trousers for males without linings. The argument was that trousers with linings were heavy, became unclean inside, whereas muslin drawers should be worn in

lieu of linings, because the drawers could be easily changed and washed at will. Since then the manufacture of underwear has developed to tremendous proportions—doubtless to the benefit of both sexes.

The promotion of hygiene in dress being the real purpose of underwear, it is a mistake to wear it unnecessarily thick or heavy. The normal functions of the skin should never be repressed or oppressed. In my own experience light wear secures all natural comfort, affords equalized circulation and temperature to the whole external surface of the body, prevents excessive perspiration while promoting sufficient excretion from the entire skin to release internal organs from the upset of struggling to perform double duty. Much underwear is made so fine and light that it is a luxury to feel its comfort without any sense of oppression. Hygienically it takes up the exudes from the skin, prevents chilliness from change of air, and by frequent change proves a true benefactor to health. Entire ventilation and rubbing of the skin are readily effected night and morning at time of dressing and undressing. The inseparable relations between the blood and the skin are demonstrated to full view by all diseases of the skin, whether acute or chronic. I fearlessly reaffirm what I have declared for a quarter of a century, that disorders of the skin are positive evidences of defective or disordered conditions of the blood volume itself. If we can cure the blood we will find that the skin is cured—though it may bear the scars of its local diseased condition for the rest of natural life. Physicians in general family practice know how difficult it often is to cure a patient of skin disorders like erythema, eczemas, scrofulous invasions, syphilitic erosions, and a host of other afflictions called by many names. The eruptions of chicken pox, measles, scarlatina are measurably self-limiting though thrust upon the skin by the circulating blood, but nevertheless they are blood disorders. And what can we boast of when we confront cases of erysipelas, boils, carbuncles? Blood, blood seeking purification through the external covering of the human habitation.

1726 North Twenty-second street.

"Millions" and Malaria.—"Millions" are little fresh water fish from Barbadoes, a large number of which have been presented by Mr. C. K. Gibbons to the London Zoological Gardens; they are of especial interest because of their proposed action in preventing malaria. This disease is much less common in Barbadoes than in other West Indian Islands, and it has been suggested that this freedom is due to the presence of enormous quantities of "millions" in the fresh water pools. These little fish are very voracious and destroy large numbers of the anopheles larvae. The males are about one-half inch long, with brilliant iridescent colors and large black spots on the sides. The females are much larger and not nearly so highly colored. Experiments are intended with the introduction of these fish into tropical countries where malaria is prevalent. It is stated that, on the initiative of the King of Italy, large numbers of "millions" are being introduced into that country, and that their effect in destroying malaria bearing mosquitoes is to be carefully tested.

ANTHROPOLOGICAL PROLIFICITY EXTRAORDINARY.

BY C. C. MAPES, COVINGTON, KENTUCKY.

IT is not strange nor unnatural that prolificity has been the subject of extended discussion, in both ancient and modern times, since it possesses features of enduring interest outside of its consideration from a purely medical standpoint. The question is of considerable importance from the aspect not only of social but also of political economy.

In some parts of the world, in the olden times, there were in existence legal enactments which had for their primary object restriction of the family, thus in a measure preventing superfluous population, i. e., in certain oriental countries, especially, female infants above a stipulated number together with the weaker males were destroyed, only the stronger and more promising being preserved. In other sections parents having children beyond their ability to support were permitted to sell them into slavery, and it is said that at one time the sacred crocodiles of the Nile were fed upon the surplus infants born in that locality! Many of the older writers on human economics speak of the necessary restriction of the population, and indicate the ways and means to be employed in accomplishing the desired results, ancient literature of the Roman Empire being particularly rich in information anent this and kindred questions.

It is claimed that the inhabitants of Great Britain are unsurpassed in prolificity, although, as a matter of fact, human fecundity in different parts of the world varies but slightly, except in certain circumscribed areas. The writings of Aristotle, Pliny, et. al. illustrate the wonderful fertility of the women of Egypt, Arabia and other warm countries; that the birth of three to six children at a time from one mother was not an uncommon occurrence; and it is said that such children usually lived to maturity. The Swedes have always been noted for their extraordinary prolificity, eight to twelve children in a family being quite common, twenty-five to thirty not very rare. The inhabitants of frozen Iceland are also said to be extremely prolific, families of fifteen to twenty children being not uncommon; and the older settlers of North America were generally blessed with large families. However, as already intimated, it matters not what be the country, the latitude, the nationality of the people, barring certain easily explained exceptions, the fecundity has been practically the same the world over in both ancient and modern times. It must be admitted, however, that at the present day, in certain circumscribed areas, inhabited almost exclusively by the ultra-fashionable and ultra-civilized—where abortion, criminal and otherwise, has become so generally practiced that it is no longer frowned upon or even weakly condemned, where the professional abortionist is recognized as a necessary if not a distinctly praiseworthy institution—as a matter of course very few infants are permitted to be born alive! And it may be remarked en passant, that abortion is not the only criminal tendency directly or indirectly traceable to the present ultra-civilization in certain quarters; but the intent and scope of this dissertation do not permit extended discussion thereof in this connection.

The actual number of infants it is possible for a normal woman to bring forth at a single birth can

by no means be definitely determined. It was the opinion of Aristotle that a woman could have no more than five children at a single birth; Pliny claimed positive record of twelve; another writer sixteen; and Cromerus (Pare) declared that a woman to his certain knowledge bore thirty-six living children at one time! Of course some of these statements appear incapable of credence, but the examples are duly recorded in scientific literature. However, the most atrocious insult to human intelligence and credulity is perpetrated in the record of the celebrated case of Countess Margaret, who, it is said, at the age of forty-two, at one birth brought forth three-hundred and sixty-five infants; one hundred and eighty-two males, one hundred and eighty-two females, and one hermaphrodite! This was evidently a multiple hydatiform molar pregnancy, and each separate hydatid cyst was regarded as a human fetus; otherwise there seems no plausible or reasonable explanation!

Statistical research shows that the proportion of multiple births is not greater than one per cent. of the total parturitions, and the percentage remains about the same regardless of country, nationality, time, or other consideration. Quadruplets probably occur once in about 400,000 births. Quintuplets are correspondingly more rare, as a matter of course, and it is improbable that more than fifty such instances have been recorded in the literature of the world. Sextuplets are even more scarce, but there are a few such examples on record. Multiple births over six are of the greatest rarity, modern literature showing record of almost no such cases which can be considered reasonably well authenticated. The older writers, however, report numerous instances of the kind, as already indicated; but there is ample reason to doubt the accuracy thereof, particularly since no prototypes are to be found in modern current medical literature. Albucasis records an example of seven children at one birth; D'Alechampius seven; Sigebert seven; Borellus eight; Watering eight; Seignette nine; Mirandulæ (Pare) nine and eleven; Walford ten; Baytroff (Jonston) nine and twelve; Le Brun thirteen; Albucasis (later report) fifteen.

Instances of the repetition of multiple births are quite common, and so often repeated as to produce families the size of which seems almost incredible. Aristotle knew of a woman who had quintuplets four times; Pliny records a similar case; and Pare mentions a woman who within a year after marriage gave birth to twins; the second year triplets; the third year quadruplets; the fourth year quintuplets; the fifth year sextuplets! Ancient Egyptian inscriptions (Mirandulæ) show that women not infrequently brought forth eight infants at a birth, that one woman bore thirty children in four confinements, and that three or four at a birth was quite common.

Merriman mentions a woman who had twenty-one children in seven successive accouchements. A more recent case is reported from Indiana in which a woman was the mother of twenty-five children, twins seven times; and another was delivered of triplets thirteen times. Warren cites the case of a woman who bore twenty-one children in eighteen years, and many examples not dissimilar in any essential respect are on record.

Some of the cases recorded are most wonderful accounts of prolificity, in which by repeated multiple

births women are said to have borne children the number of which is almost beyond belief, e. g., a woman aged forty-seven, married at twenty-eight, gave birth to fifty-five children, triplets fifteen times; another had fifty-seven children in twenty-one pregnancies, and a woman twice married gave birth to a total of one hundred and fifty-eight children! In one instance cited, a man aged seventy, twice married, was accredited with being the father of seventy-two living children; his first wife bore fifty-seven in twenty-one pregnancies; second wife fifteen, twins six times, triplets once; in another a man at the age of seventy-five was the father of eighty-seven children, his first wife having presented him with sixty-nine in twenty-seven accouchements, his second wife eighteen in eight pregnancies!

There are also on record some extraordinary, almost incredible instances of prolificacy by single births. The number of children a woman may bear under these circumstances is likewise unknown, for the reason that ovulation may begin quite early in life and be prolonged until the age of seventy or even one hundred years. As a matter of fact, in many instances, pregnancy has occurred in girls under twelve years, likewise in women over sixty. It has been estimated that by single births alone it is possible for a woman to bear at least seventy children! Eisenmenger cites the case of a woman who was the mother of fifty-one children, and in another instance a woman gave birth to forty-four male infants, all single births. Atkinson speaks of a woman married at sixteen, dying when sixty-four, who had borne thirty-nine children in single births. In other instances there are mentioned twenty-two, twenty-four, twenty-six and even sixty-two children, all living, and all single births.

Not very long ago there was reported from Michigan a case in which the wife of a professional gentleman gave birth to a daughter, the mother at the time being sixty-five, the father sixty-eight years of age. This was the third child, the other two having been born forty-five and forty-three years previously. A somewhat similar case comes from Ohio, in which a woman aged sixty, twelve times a grandmother, gave birth to a ten-pound baby boy. Long Island furnishes the record of an example in which a child was born to parents whose ages were: father eighty-five, mother thirty. This was the only child, the parents having been married nine years. A Canada woman over sixty recently gave birth to a baby girl. Her husband, to whom she had been married seven years, was seventy-eight years of age. The mother had been married twice, and this was her twenty-second child. The day thereafter, "not to be outdone by any foreigner," an Oklahoma woman of sixty-five bore a baby girl. This mother also had a number of other children ranging in age from thirty-five to forty-five years. Pliny, Marsa, Tarenta, Blanchard, Fielitz, Rush, Bernstein and many other of the older writers cite cases in which women of sixty years bore children; Schoepfer mentions an instance at seventy; Debes at one hundred and three; Haller at fifty-eight, sixty-three and seventy; Dewers at sixty-one; Chauvalon at ninety; Kennedy at sixty-two; McCarthy at sixty-nine; Mayham at seventy-three; and mothers at fifty to fifty-eight are quite commonly observed.

In the majority of the instances mentioned, according to the history, menstruation had ceased many years previously.

Some of the male sex (as might naturally be supposed) have even better records than cited in the foregoing. A Tyrolese gentleman named Paravicini is reported to have married at the age of eighty-two years, and to have thereafter been the father of seven children, the last of whom was posthumous, the father having died at the age of one hundred and four years. Juba, King of Mauritania, is believed to have died at the age of ninety-one years, leaving a posthumous child!

The possibilities of paternity have thus far only been hinted at, and, in fact, that is about all that can reasonably be done. However, several interesting examples appear to be worthy of brief citation. A man had been married four times; by his first three wives he had thirty-nine children, by his last fourteen, making a total of fifty-three. Two cases have already been mentioned in which the paternity was seventy-two and eighty-seven children respectively. A man in Indiana died at the age of one hundred and seven years, he had been five times married and was the father of fifty-seven children. Artaxerxes was supposed to have had one hundred and six children; Conrad eighty; and in the polygamous countries the number seems incredible. Herotinus was said to have had six hundred, and Jonston quotes instances of two hundred and twenty-five, and even six hundred and fifty in the eastern countries.

The published account of the experiment of one Luigi Erba, of Perugia, is doubtless still fresh in the memory of many medical readers, but the incident may bear repetition in this connection: This erratic gentleman finding himself possessed of considerable wealth at the age of forty visited various quarters of the world in order to secure women of different races; having obtained a sufficient number for his purpose, he retired with them to Polynesia, where he is accredited with maintaining a unique establishment with his household of females! In just seven years after the commencement of his experiment, it is said that he was the father of three hundred and seventy children!

The case is recorded of a South Carolina negro aged sixty-five, twice married, who is the father of forty-two children; by his first wife twenty-three, the second twenty-two. In another instance a white man, accidentally killed at the age of sixty-nine, married three times, was the reputed father of forty-one children.

An unusual report comes from the state of New York in which a woman gave birth to triplets. In some respects it seems to be the most remarkable case on record. There were two males and one female, and their aggregate weight was fifteen pounds. The two boys were attached to each other by a band almost precisely as were the famous Siamese twins, while the girl was joined to one of the boys by a band passing from the hip of the one to the hip of the other! The children survived for about seven hours after birth. When death of the girl and one boy had occurred, an effort was made to save the life of the remaining boy by severing the band which bound him to his brother, but it proved ineffectual.

A woman in Frebusa (Austria) recently gave birth to six children, three boys and three girls, all alive and in apparent good health at time of the report; and a woman living in the interior of Kentucky gave birth not many months ago to five children, three boys and two girls, all alive and well. The *Gazette Medicale de Paris* (quoting the *Pester Lloyd*) states that the wife of a Greek priest, at Deligrad, Servia, has recently given birth to six children, three boys and three girls, all healthy and well developed. Eighteen months previously the same lady had given birth to triplets, making a total of nine children in a year and a half! A similar case is reported from the state of Tennessee, in which a negress gave birth to six children, all well developed and healthy at last accounts.

A case is cited by the *Scottish Medical & Surgical Journal* in which a woman was found lying exhausted in a hut, with six fetuses beside her, five boys and one girl. There were four placentas, one of which belonged to the girl, another to one of the five boys, and the other two to two boys each. It is said that labor lasted only four hours, and that each placenta was expelled after the children to whom it belonged. This was the woman's fourth pregnancy; in her first she had given birth to quadruplets; and in each her second and third to triplets. There had thus been the extraordinary obstetric output of sixteen children in four pregnancies. It may be added that all six children were dead before two days had elapsed. From Pennsylvania comes the report of a woman aged forty-three, married at thirteen, who has in the thirty years of her married life given birth to twenty-four children, of whom twenty are now living.

Virginia furnishes the history of the following rather remarkable case, a sketch of which is interpolated in this connection, although it bears no relation whatsoever to the question of prolificity: A mulatto woman, well formed and healthy, as was also her husband, gave birth to four male infants—the results of the first, fourth, fifth and sixth pregnancies—in all of which the hands and feet were attached immediately to the body (*phocomelus?*), and all lacking the external ear. Her female infants were normal, and are still living. There was said to have been a maternal impression (fright from opossum) in each of the pregnancies which ended in the birth of a monstrosity. A report from West Virginia, also having no relation to fecundity, may be of interest, viz.: the birth of a normal girl baby weighing twenty-four pounds! This is said to be the largest infant ever born in the Virginias.

A linen weaver's wife, aged forty, married twenty years, bore in eleven pregnancies thirty-two children. At the first labor quadruplets, the second triplets, the third quadruplets, the fourth twins, the fifth triplets, the sixth twins, the seventh triplets, the eighth triplets, the ninth twins, the tenth triplets, the eleventh triplets. Twenty-six were males and six females. The father was one of twins, and the mother was one of quadruplets of a mother who had borne thirty-eight children. The woman had been epileptic from her fifteenth year, the attacks recurring unchanged during her successive pregnancies. She was in her twelfth pregnancy at time of the report.

There is recorded in one of the Italian medical journals an extraordinary case of fecundity of which

it guarantees the authenticity. One Flavia Granta, who it appears is well known at Rome, recently gave birth to her sixty-second child. This woman is fifty-nine years old, was married at twenty-eight and has successively given birth to a daughter, then six sons, then five sons, then four daughters, and then a long series of twins annually, and ended by having four sons. It is much to be regretted that this interesting woman did not marry earlier, as she thus lost ten previous years of her life, and so missed the distinction she might have enjoyed of being the mother of a hundred children!

According to the *Indian Lancet*, it has remained for an Italian woman to break all maternity records. She has in nineteen years of wedlock become the mother of sixty-two children. This extraordinary statement is vouched for by many credible witnesses, who testified thereto in a petition to the government requesting for the woman an annual pension. Of these children fifty-nine were boys and three girls. Eleven times in succession, in nine years, this prolific female gave birth to triplets, three times four boys arrived at one birth, and once five boys and one girl. The other twelve were born singly but very close together. This woman is a native of Nocera, a small village near Naples, and is fifty-seven years of age.

There are some remarkable cases on record as to the number of descendants of given persons, in both ancient and modern times; but extended consideration thereof would hardly come within the purview of this paper. A few instances, however, may be permitted. A Spanish gentleman who had spent seventy years in America returned to his native country not many years ago with his family which numbered nearly two hundred persons. Connecticut furnishes the history of a woman who left a total of four hundred and ten descendants. There are several cases recorded in England where there were from three hundred to four hundred lineal descendants, and records of one hundred to two hundred are too numerous to mention.

While this dissertation is intended to include only instances of extraordinary prolificity in the genus homo, it may not be entirely out of place to mention a few cases of unusual fecundity in animals. There is an apparently well authenticated report that a cow in France gave birth to five calves at one time. An incredible account is quoted of a cow, the property of an Ohio farmer, which gave birth to fifty-six calves, one of which was fully matured and lived, the others being about the size of kittens; these died together with the mother. Another cow owned by a prominent farmer in Indiana gave birth to twenty-three calves at one time, one of which was of ordinary size and lived, the others were about the size of Belgian hares and survived but a short time.

Some years ago there appeared in the *Illustrated London News* a portrait of "Lady Millard," a fine St. Bernard bitch, the property of a Northwold gentleman, with her litter of twenty-one puppies. There appears to be no question about the accuracy of at least this report of animal prolificity.

As to the causation of multiple births, little need be said. It was thought by the ancients that the greater the quantity of semen ejaculated the larger the number of children likely to be brought forth at

a single birth, the premise evidently being ignored or overlooked that the ova had aught to do with the production of offspring. Of course we now understand that a woman may only bear at a single birth as many children as there are present ova to be impregnated at the time coitus is practiced. While superfetation sometimes occurs, it is unusual and consideration thereof has no place in this paper.

For many of the instances of extraordinary prolificity cited herein the writer is indebted to the admirable work of Gould & Pyle on the Anomalies and Curiosities of Medicine published in 1896, some of the remainder have been abstracted from current medical and other literature, a few have actually been observed by the writer in his personal experience.

CHEYNE-STOKES BREATHING: REPORT OF A CASE.*

BY A. M. DAVIS, M.D., GERMANTOWN, PENNA.

WHEN the respiratory centre, from any cause, becomes affected pathologically, the mechanism of respiration undergoes a change and various forms or modifications of normal breathing are the result. These may assume an irregular form, i. e., not possessing any well-defined type but, when present in disease, they invariably denote some grave constitutional disturbance and generally give rise to an unfavorable prognosis. Although not infrequently met with during the course of a number of diseases and abnormal conditions, yet the Cheyne-Stokes type of respiratory disturbance is interesting because of its association usually with cardio-vascular phenomena. Fifteen years ago this symptom was thought to exist in but three conditions namely, uremia, fatty heart and tubercular meningitis; now we know that it also occurs in tumors and hemorrhages of the brain, arterio-sclerosis, non-compensating aortic stenosis, coronary embolism, diabetes and certain acute diseases, notably typhoid fever, pneumonia, pertussis, cerebro-spinal meningitis, scarlet fever and septicemia. In these latter, however, it is probably due to the development of an acute parenchymatous nephritis.

Rarely it has been noted in children and even in adults during healthy sleep and Filehne has shown that it may be produced experimentally in rabbits by the hypodermic injection of morphine. According to Osler, "The administration of this drug increases the tendency to this type of breathing in those so predisposed." Formerly it was supposed that the development of Cheyne-Stokes breathing was a certain forerunner of death; now it is known that many cases recover, particularly those in which it is a complication of some acute disease. The cycle consists of a period of apnoea, in which the patient ceases to breathe (sometimes as long as forty-five seconds), followed by very slow respiration which gradually become faster and faster until the period of dyspnoea is reached. This gradually recedes, merging into apnoea, the whole cycle occupying from thirty (30) seconds to two (2) minutes. The pupils are often closely contracted and non-responsive to light during the stage of apnoea, but as the respirations in-

crease they dilate and become mobile. The pulse is often very slow during apnoea and rapid during dyspnoea, although sometimes unaffected by variations in breathing. Various theories have been upheld to account for the phenomenon of Cheyne-Stokes respiration. Traube believed it to be due to a diminution in the irritability of the respiratory center, by which it failed to respond to the normal stimuli; with the cessation of breathing, venous blood collects which stimulates the respiratory center and the breathing begins. As the blood becomes aerated from the renewed breathing, the stimulus (carbon dioxide) is removed and the breathing again ceases; this would account for the extremes of apnoea and dyspnoea.

Rosenbach disputes this theory by asserting that the venous changes in the blood have nothing to do with Cheyne-Stokes breathing, believing it to be due to fatigue of the respiratory center.

Filehne claims stimulation of the vaso-motor center, which produces constriction of the arteries leading to the brain, thus allowing venous stasis and carbon dioxide stimulation to occur. As breathing deepens the blood becomes better aerated and the vaso-motor centres, being now stimulated by CO₂, allows the arteries to dilate and thus a fresh supply of arterial blood reaches the respiratory center; the latter, being no longer stimulated, breathing again ceases. This completes the cycle. According to Krehl the relationship between arterial and intracranial blood-pressure determines the nature and severity of Cheyne-Stokes breathing; when the arterial pressure exceeds that of the cerebral, the respiratory center is supplied with blood and the patient breathes; when it falls below intra-cranial pressure, breathing ceases. In other words, loss of blood supply causes the respiratory center to lose its irritability and to become inactive.

Eyster, in his experiments with the Erlanger sphygmomanometer, mentions two groups of cases:

(a) Those in which a rise of blood-pressure and an increase of pulse-rate during dyspnoea and with a fall of both during apnoea.

(b) Those with the reverse, i. e., a fall of pressure and of pulse rate during dyspnoea and a rise during apnoea. The latter cases were associated with cardiac and arterial disease.

The report of the case is as follows: Miss D., age 74 years. Family history: Father died of angina pectoris at the age of 70; fell dead in the street. Mother died at 90 of "old age." One sister died at 40 of abscess of the liver; the remaining sister at the age of nine of inflammatory rheumatism.

Previous history: Had pneumonia when an infant, also the usual diseases of childhood; at the age of eighteen years had malarial remittant fever which lasted three months. Never had rheumatism.

History of present illness: In December, 1907, the patient suffered from a light attack of influenza which was followed by severe and almost constant substernal pain; the pain did not disappear with the attack of grip but persisted and was accompanied by a sense of heavy pressure over the sternum and dyspnoea on exertion. In June, 1908, the pain and oppression became unusually severe while at the seashore, necessitating her remaining absolutely quiet

*Read before the Northwest branch of the Philadelphia County Medical Society, May 7th, '08.

for several weeks. In September of this year, the patient first consulted me at my office. Physical examination revealed a thin, poorly nourished female about five feet, four inches in height; the palpebral conjunctivae, finger-nails and lobes of the ears were abnormally pale. The skin covering the surface of the body was lax and wrinkled; lips slightly cyanosed; slight dyspnoea, aggravated by exertion; eyeballs were rather prominent, arcus senilis was entirely absent. Vision was slightly myopic. The radials were much thickened although compressible and the pulse showed high tension with rather a feeble volume.

On ausculting over the cardiac area, the apex beat was found to be normally situated; the cardiac impulse was feeble, the muscular element of the first sound being diminished. A presystolic thrill could be plainly felt over the apex beat and the murmur of mitral stenosis was apparent. Examination over the base of the heart showed accentuation of the second pulmonic sound; the aortic sounds were apparently normal. The substernal pain continued with varying intensity, being always increased on exertion until April 12. During the interval between the first seizure (September, 1907), and April, 1908, the patient was only able to walk short distances very slowly, as slight exertion aggravated the pain and dyspnoea. Because of the almost constant substernal pain, the existence of an aneurism was suspected, but no signs of a bruit nor difference in the radial pulses was apparent.

Several examinations of the urine during this interval were made with negative results. On the morning of April 12 the patient awoke with nausea and loss of appetite; the pain in the chest was more severe than usual. She was unable to take any breakfast and at noon became stuporous, almost comatose. The urine was suppressed, bowels constipated, temperature subnormal, pulse rapid (96) and somewhat irregular. She could be roused with effort, but refused nourishment and lapsed into a stuporous condition. When aroused, she complained of the chest pain being severe. Examination of the urine at this time showed $\frac{1}{2}$ per cent. albumen, but no casts were discovered.

Chologogue and diuretic treatment was given with but little improvement in the symptoms. Forty-eight hours after the onset of the attack, nausea and vomiting developed with Cheyne-Stokes breathing. During the period of apnoea, the surface of the body became cyanosed and covered with cold perspiration. There was some rigidity of the muscles with subnormal temperature. The eyelids were partly open, the lower jaw dropped and the pulse was very slow and irregular, being scarcely perceptible. A count made during one of these attacks showed it to register 46 beats during the period of apnoea, while during the stage of dyspnoea it numbered 96 beats and was slightly irregular. During the forty-eight hours of Cheyne-Stokes breathing, the patient could be roused with difficulty but almost immediately lapsed into a deep sleep. The quantity of urine which had only amounted to from 4 to 5 ounces during twenty-four hours, now increased rapidly, until it reached 25 ounces. The pulse lost its intermittant and irregular character and became uniformly rapid, numbering 96 beats per minute and the Cheyne-

Stokes respirations at the end of 48 hours had disappeared entirely. The mental torpor also cleared up and, although sleeping from 12 to 14 hours of the twenty-four, the patient could be easily aroused and her waking periods were normal.

Since that time (one month later) nothing of note has occurred. The pulse still retains its rapidity and high tension, but the albumen has entirely disappeared from the urine and the substernal pain is likewise absent. An interesting fact in connection with the case is that, although the bowels are active and the tongue is perfectly clear, the patient has a marked and constant aversion to any kind of food, the mere thought of nourishment exciting nausea. She has been kept alive on predigested liquids.

The interesting points in the case were the co-existence of the mitral stenosis, the almost constant sub-sternal pain before the attack, the pronounced degree of arterio-fibrosis with the complete absence of arcus senilis and the simultaneous increase of kidney action with the disappearance of the Cheyne-Stokes breathing.

The Meniere symptom complex, states S. P. Goodhart (Medical Review of Reviews, July 25, '08), consists of the more or less sudden onset of deafness associated with the characteristic triad—vertigo, tinnitus and vomiting. To these classic symptoms are often added subjective pressure sensations of the head, a varying degree of cerebellar ataxia and a true nystagmus. One or more of these associate symptoms may be present; diarrhoea, often intense and serious is not so infrequent. Goodhart has found Frankl-Hochwart's case grouping the most comprehensive. First are those cases coming on suddenly in patients who have not previously suffered from any form of ear affection. Among these are the true apoplectic cases, whose anatomical basis is found to be hemorrhage in the auditory labyrinth; there is also infiltration of the auditory nerve. The apoplectic onset of deafness, partial or complete, tinnitus, vertigo and vomiting may appear in those who are free of ear affection and previously also in good health. The classic trio may also come on in those of normal hearing apparatus but otherwise predisposed by active syphilis (or its sequel, tabes dorsalis), general arterial disease, nephritis, leukemia. Another class of cases are those determined by trauma, such as violent blows upon the head, cerebral concussion, direct injury to the labyrinth or Caisson disease. In the cases thus far stated we have assumed freedom from previous acute or chronic ear disease. It is not uncommon, however, for the Meniere symptom-complex to develop in patients with either acute ear affection or with a chronic form of otitis. These chronic ear cases are far more frequently associated with the Meniere triad than the acute. However, in acute labyrinthine involvement the typical deafness and triad of symptoms is not uncommonly a form in which the Meniere appears. The so-called abortive forms of cerebro-spinal meningitis, beginning with deafness and vertigo in children, probably belongs to this class. The toxic forms of the affection (such as are caused by coffee, quinine and the salicylates) have a similar origin. These cases are, of course, of the mild form of the Meniere symptom-complex and are purely symptomatic. Another class of the same type are

those with chronic disease of the eighth cranial nerve, the acousticus or its root; and among them are the tabetic cases and those seen in nasal brain tumor. Goodhart describes several important congeners of Meniere's disease: The "polyneuritis centralis Menieriformis" of Frankl-Hochwart, in which the development is acute with fever, herpes, facial paralysis and nerve deafness combined with the Meniere triad; its etiology is apparently due to developing basal brain tumor. Gertier has found in Switzerland the "vertige paralytique" (it is seen also in Japan, where it is known as "Kubisagari"); there are a series of sudden attacks of vertigo, somnolence, ptosis, pains in the cervical region and palsy of the neck muscles, causing the head to droop forward; there may be general weakness and paralysis, with peripheral speech disturbance; consciousness is not lost; the seizures last but a few minutes, occur only in hot weather and may be repeated every few hours; there may be no symptoms in the interim; the onset, duration and symptoms suggest the Meniere disease. Voltolini has come upon an affection primarily labyrinthine which strongly resembles Meniere's disease; the onset is with high temperature, general cerebral symptoms, vertigo and vomiting; no loss of consciousness; the symptoms subsiding in a few days and leaving a staggering gait, vertigo and deafness—the latter remaining to some degree permanent; a plastic destructive exudate has been found in the semicircular canals. The Meniere triad is also a symptom complex in which the transitory vertigo is the marked feature, as a result of such manipulation as Eustachian tubes catheterization, head galvanization and even ear douching. The paroxysmal "pseudo-Meniere seizure" is observed in neurotics; in epileptics and during hysterical seizures; rarely during true neurasthenia and hemicrania. In true Meniere's disease the pathological basis lies in some such form of labyrinthine disturbance, hemorrhage, inflammatory processes, intense hyperemia, syphilitic disease, or local circulatory disturbance of the labyrinthine structure. The deafness may affect one or both ears; and it varies from slight impairment of hearing to absolute loss. The vertigo is of variable intensity; as though the patient "were rapidly revolved first upon one axis, then upon another;" the sensation is akin to that experienced upon a rapidly revolving carousel or upon a ship turned on a heavy sea; "circus motions" may be manifested by the patient. The tinnitus likewise varies in intensity, in some becoming rapidly more intense as the paroxysm approaches, in others being entirely absent during the intervals. The paroxysm may begin with a tinnitus as a kind of aura, thus giving warning of an approaching seizure, much as is the case in epileptic attacks. The subjective nature of the tinnitus varies; it is of a buzzing character; or like a violent windstorm; as though a large seashell were held close to the ear; like the roaring of an immense waterfall. As in all forms of subjective ear noise, the aural sounds have been the developmental element in determining true hallucinatory impression; Goodhart does not doubt, however, that such cases were established upon a paranoid soil.

The Meniere vomiting is sometimes characterized by severe nausea; it is most exceptional that all gas-

tric manifestations are absent. The vomiting appears as a rule at the height of the paroxysm, or it may signalize the termination of the attack. The amount ejected and the presence or absence of gastric pain are variable. Typical projectile or cerebral vomiting with no nausea is observed; there may be important serous diarrhoea. The onset is variable in violence and suddenness; perhaps so immediate as to lay the patient prostrate without warning and with the momentum of a blow, as in an epileptic seizure. The approach may be somewhat gradual, enabling the patient to gain support or lie down; the direction of the fall may be uniform, but generally it is not; as the violence of the seizure abates and the symptoms subside, inco-ordination and ataxia of the lower limbs becomes evident. The Romberg symptom and varying degrees of ataxia are commonly present as permanent symptoms and are valuable diagnostic factors in interparoxysmal periods; there will almost invariably be found some motor disturbance between the acute attacks. Much less frequently is some inco-ordination in the upper extremities found; in one case, however, the handwriting was markedly changed by the disease. There are ocular symptoms—nystagmus, double vision, narrowing of the visual fields, subjective sensations, such as zigzag figures; closing the eyes tightly, fixing upon a near object; compressing the eyeballs influences the vertigo favorably. Consciousness is very rarely lost; such disturbances are only transitory. Vasomotor phenomena are among the accompanying symptoms; the pulse is accelerated, very rarely retarded; a nervous chill or tumor may irritate the attack; a sudden facial congestion is frequently seen. Frequent attacks of Meniere's disease will often develop a true neurasthenia; most sufferers from Meniere do not however belong to the recognized neurotic type. Except that hemorrhage or inflammatory lesion of the labyrinth has regularly been found, the pathological findings have not been uniform. Goodhart is inclined to think that the occasional remarkable manifestations seen in Meniere's disease indicate more extensive pathological involvement. Not improbably, however (when one considers the nerve association between this part of the auditory apparatus and centres of important function in the central nervous system), that the peripheral lesion may induce the severe train of symptoms seen in Meniere's disease. As to prognosis, the individual symptoms become ameliorated after some years. There is, however, invariably some nervous exhaustion, with a varying degree of neurasthenia. The outlook in the apoplectic form cases has been less favorable, many having died soon after the initial attack. The defect of hearing is in some degree permanent; the tinnitus becomes less severe in subsequent attacks; the vertigo also diminishes in intensity; the nature of the seizures often changes, each symptom becoming milder; with degeneration of the auditory nerve the paroxysms disappear; the average duration of the active disease is three years; there may be long periods of remission. Goodhart concludes his most valuable paper with the citing of an instructive case; and he rightly observes that to a correct understanding of Meniere's disease it is essential to be familiar with the anatomy and physiology of the internal ear.

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THE AUTUMNAL DISEASE.

TYPHOID fever has been thus termed by reason that (except for the epidemics arising out of infection from an individual sufferer, which may occur at any time) its mortality is greatest in the fall. This would mean that in the majority of cases the infection has taken place in the summer months. The natural and very scientific inference has been made that since flies are most rife during the hot months, they must play some part in the conveyance of the infection. And such is undoubtedly the case. These insects find food and filth equally congenial; they breed most luxuriantly in manure, cesspools, garbage and in privies. They must surely inject and carry about on their legs bacteria most injurious to health, and among these undoubtedly typhoid bacilli. We recall Jackson's most pregnant observation that he captured a fly behind a packing box on the East River front which had in its mouth and sticking to its legs 10,000 fecal bacteria; and it was making its way straight for the nearest milk pitcher. Other means of infection which have forced themselves upon the profession's attention have been the "typhoid carriers," those individuals who having at one time had the disease, may for months or years disseminate it by their excreta, the bacilli continuing after recovery to be multiplied, probably in the gall-bladder.

Typhoid is no doubt often disseminated in milk; in Massachusetts, it is stated, practically all the epidemics of this disease in recent years have emanated from this source. Water, especially contained in tainted wells and ice have long been held responsible for typhoid outbreaks; and many cities, in view of this fact are pursuing the enlightened and essentially economical policy of safeguarding their water

supplies by filtration plants and other means. Food to which flies have had access, uncooked vegetables and fruits, "fattened" oysters, clams, and the cretaceans, those "scavengers of the sea," have all been the means of typhoid infection.

The prophylaxis is theoretically simple enough, because the infection is not air-borne. Destruction of the sputum as in tuberculosis; disinfection of the water in which the patient has been bathed (for the bacilli have been found in the petechiae or rose-spots); thorough disinfection of the patient's stools and urine; of the soiled linen, of the remnants of food and drink, of the eating utensils, of the hands of the nurse or other attendant, thorough disinfection of the sick room after recovery—such is the personal prophylaxis of typhoid fever. Ricketts wisely holds that no patient should be discharged until bacteriological examination of stools and sputum show them to be free of bacilli; this surveillance should extend at least to the end of convalescence. Other means are the exclusion of flies and other insects by means of screens, proper drainage, the proper disposition of sewage and of manure heaps, and such other measures as only the authorities can institute and enforce—measures for the fulfillment of which the loyal and hearty support of the citizen should be enlisted.

The economic aspects have taken on additional interest since the exposition of Hazen's Theorem, a statement of which appears in another column.

IS TRYPANOSOMIASIS CURABLE?

IT was at one time supposed that trypanosomiasis fever and the sleeping sickness were not the same disease; it has now been concluded, however, that together they constitute the same morbid entity, the former representing the prodromal stage (lasting from 6 to 18 months); the latter (extending through a further period of from 3 to 12 months) being the somnolent culmination.

The disease has for its specific cause protozoan, the *Trypanosoma Neprevi* which is conveyed from animal to animal and from animal to man by the tsetse fly (*Glossina Palpalis*), a voracious blood-sucking insect, as an intermediary. It is not quite certain if this fly is the only intermediary; possibly other insects also play this part. The sleeping sickness was first known to exist in an equatorial area of some forty miles on the West African coast; it has now extended, principally it would seem by the "rapid transit" methods of civilization over vast African regions extending from the West to the East coast of that continent and from the Indian

through Rhodesia in the south. The great European governments have become alive to the necessity of action; and concerted measures of colossal proportion are being instituted to prevent the further spread of this infection and to eradicate it from the regions it has thus far invaded.

The symptoms of this dreadful disease vary according to the stages mentioned. The parasite may for a long time have invaded the system without occasioning any manifest disturbance. Then there develops fever (which seems heightened according to the number of the protozoa present, on which account the affection has been mistaken for malaria); there are lassitude, weakness, progressive emaciation, rapid and variable pulse and respiration, occipital headache, a gait as of a drunken man, mumbling, uncertain speech, giddiness, tremor of the hands, swelling of the lymph glands and of the spleen, oedema of the face and feet. There may be convulsions and paralysis; or mania and delirium; the skin is dry and there is a papulo-vesicular eruption. Later in the disease there is drowsiness, increased until sleep is so constant that the patient can be aroused only to take food. During the periods of consciousness (which progressively become briefer) the mind is clear. The lids tend continually to close. It is then that secluded, out of the way, places are sought by the sufferer. Finally he cannot be aroused at all, becomes comatose, the vesical and anal reflexes are lost, and death follows, usually from some such secondary affection as septic encephalitis. The somnolence which is so characteristic of this disease is probably due in large part at least to the fact that the trypanosome is found in the cerebro-spinal fluid. Ricketts relates the pathetic (and typical) case of the wife of a missionary in upper Congo who was bitten by a tsetse-fly. There followed an inflammatory reaction of the site of the bite, upon which she developed and ran a long course of trypanosomatic fever. After a year and a half to two years of remittent temperatures (the parasites being repeatedly found in the blood) she grew weaker, became somnolent and died in a comatose condition.

Up to very recently it has been considered that trypanosomiasis is incurable. Osler observed, "it appears to be uniformly fatal;" Bruce, that "it is an absolutely fatal disease;" Ricketts that "recovery has not been reported." But these opinions antedate the present year. What do we now learn?

Ehrlich has been using a trypanroth (a new aniline dye) which has seemed to have a specific action on the trypanosomes in animals; malachite green in combination with arsenic seems also to have been effective. Castellani has found quinine cacodylate to show a marked trypanocide action in experimented

monkeys inoculated with a strain of trypanosoma resembling *T. evansi* (a congener of the *T. Neplevi*) existing in surra, an Indian disease principally affecting animals, and at least akin to trypanosomiasis, and that mercury improved the general condition of these monkeys; he therefore advises that this quinine preparation, with intravenous injections of mercury perchloride, be administered to human sufferers from trypanosomiasis.* Loeffler and Ruhs announce a positive cure of experimental tsetse-fly disease in animals (nagana) by the simultaneous administration of an adequate dose of arsenic and by the mouth and of atoxyl (arsenic acid anilide) subcutaneously. They declare that favorable results can also be obtained by rubbing a salve of atoxyl into the skin; that these means are destined to be the most effective in this disease; that effective prophylaxis may be secured by means of arsenic acid by the mouth. The experience of arsenic eaters would seem to show that the system can thus, with fair assurance of safety, be impregnated with this substance.** A committee of the Royal Society of London has found that inoculated rats were cured by the atoxyl treatment, which did not, however, confer immunity to further attacks. Nor is this to be expected since atoxyl is not an antitoxin but an inorganic medicament. These rats being again inoculated, trypanosoma appeared in their blood in numbers four days later; a repetition of the treatment caused them to disappear again. It was Lingard who in 1903 used arsenic with good effect in Leopoldville. Somewhat later Kock, in Uganda, evolved atoxyl. Thus far this drug seems to have been only palliative; now we may hope it will prove curative. Manson† considers the prospects of this atoxyl treatment most hopeful. Among ten cases which have come under his observation, the atoxyl treatment prevailing, three died, one was improved, five were apparently well and one was certainly recovered. Manson therefore infers provisionally that human trypanosomiasis is not necessarily a fatal disease. Atoxyl in his experience checks the clinical manifestations and causes the parasite to disappear from the peripheral circulation. They may reappear at certain intervals, as shown by the temperature rise; but persistence in the use of the drug results ultimately in the disappearance of the parasites. If there is not a fresh bite of the tsetse-fly the disease appears to be cured. Manson deprecates large doses of atoxyl. Breuer, the leader of the medical parties in German East Africa, re-

*A treatment of Experimental Mypanosomiasis, Brit. Med. Jour., Feb. 28, '08.

**Cure of Experimental Tsetse-fly disease, Deut. Medizin. Wochenschr., Jan., 2, '08.

†Annals of Tropical Medicine and Parasitology, Liverpool.

ports that a European sufferer has been entirely cured by the atoxyl treatment; and similar reports come from stations in the Congo. At Urundi (on the shores of Lake Tanganyika) 83 native patients treated with atoxyl in the earlier stages have entirely recovered. Among 76 in later stages thus treated 25 died, the majority were greatly improved, and hope was had that they might ultimately be saved.

We may then, from a consideration of such data as these, entertain the confident expectation that an effective therapeutics against trypanosomiasis will in the near future be developed; with which event one of the most glorious eras in all medical history will have been consummated.

THE SPRINGFIELD RIOT.

IT is unnecessary and it would be out of place, in a medical journal, to repeat the press descriptions of murder, arson and other expressions of violence or to draw the obvious ethical conclusions from the disgraceful acts of the Springfield mob. But we may, without exceeding our proper limits, seriously question whether there is not some neurotic disturbance behind the acts of the mob, which explains, if it does not excuse the wholesale violation of the cardinal principles of law and order, not to say humane conduct. Similar acts perpetrated by an individual would lead, in almost every instance, to an investigation of the sanity of that individual although, as we have pointed out in discussing the Thaw case, there is at present, a maudlin tendency to deal leniently with criminals on the ground that criminality itself betokens a mental abnormality.

A wave of crime involving so large a proportion of a community that martial law becomes a necessity and so large that the presence of large bodies of troops in addition to the ordinary civil police and the appeals of the various officials, are inefficient to hold the mob in check, affords more excuse for the use of the expression "brainstorm" than the running amuck of an individual. When a single person gives way to anger, spite and hatred, this expression is, at best, a figure of speech, well enough suited to an informal clinical lecture, but by no means to be accepted as indicating a definite mental perversion recognized by medical authority and to be employed as a shield for the criminal. When, however, an epidemic of crime sweeps over a community and leads to the wholesale commission of deeds of violence from which the perpetrators can derive no benefit, even in the narrowest, most short-sighted and most selfish sense, and when such deeds transcend even

the logic of the most ignorant and debased, the expression "brainstorm" seems almost legitimate.

While, on sober second thought, all well balanced minds will agree that punishment of crime in accordance with legal forms, even if sometimes tedious and expensive, is best, not only to insure fair treatment of the supposed criminal and to prevent mistakes as to guilt or identity, but also to insure the greatest respect for law and order and to minimize crime in general, there are occasions when the best of us would be strongly tempted to resort to lynch law. Certain crimes are attacks not only on an individual but on society as a whole in a very direct and personal sense. The assassination of a beloved official, the unprovoked murder of any human being, rape and the like, are crimes which strike a blow at every right-minded man and experience has abundantly proved, time and again, that, however much we may theorize as to the superiority of legal proceedings, such crimes frequently lead to the attempt at lynching by the witnesses, however respectable and law-abiding.

It is also obvious that lynch law, by virtue of its hot-headedness and promptness, is much more liable than regular legal procedures to make mistakes. Thus, if the Springfield riot had stopped with the lynching of the one Negro charged with rape, even if his identification had not been complete, it would have been explicable in accordance with the ordinary understanding of human nature. We might even go further and similarly explain to ourselves the attempt of the crowd to do violence to the officers of the law and the restaurant keeper who had balked them in their natural, if regrettable, desire for prompt vengeance.

But, in the present instance, the violence of the mob continued day after day, it extended to the deliberate destruction of homes not only of men who could not by any possibility have been regarded as guilty of crime but of women and children. It continued after the wreaking of vengeance on the originator of the trouble had become impossible on account of his removal from the scene of disorder. The most dastardly act was the pursuit and hanging of a Negro over eighty years old who not only was free from the least suspicion of participation in the original crime but whose venerable age should have appealed to anyone with the most rudimentary notions of human decency, and would have classed him as a non-combatant even in a state of actual war.

Unquestionably, the Springfield mob consists of the lower class of the community, using that term in no snobbish sense. Even so, its violence is difficult to understand. We could appreciate the logic of such an outbreak in a selected group of criminals,

as for example in a prison in which the inmates were suddenly given an opportunity to break loose in a body. We could understand it if the population of Springfield included a large mass of savages or even of foreigners of a low order of intelligence and morality, such as is said to exist in certain mining communities. Even in the South, where there is some reason for race hatred, and where lynching of Negroes has been fairly common, there has never to our knowledge been such an outbreak against obviously innocent members of this race. General catastrophes such as the San Francisco earthquake usually have led to pillage by sneak thieves and to isolated deeds of violence with robbery as the motive, but in the present instance, the mob seems to have confined itself solely to physical violence and destruction and to have been free from motives of personal gain. We are tempted to draw a parallel with the mob violence of the French revolution, but here there was the accumulation of political injustice for centuries, which justified the revolution, if not its horrible details, the violence was accompanied by pillage by a populace in the depths of poverty and at least some of the formalities of law or actual warfare, preceded most of the killing.

In saying that the Springfield mob is composed of the lower class, we really place the ultimate explanation of the violence farther away. Individually, such a class does not feel racial prejudice against individuals as strongly as does the better class; individually, while it may harbor a grudge against those better off than its own members, it is usually sympathetic with the oppressed and the unfortunate; individually it would be kind to a pickaninny or to a Negro mammy and it would give its last nickel to the old uncle that, as a body, it chased through the streets and hanged to a pole. Individually, most of the participants in the riot will, within a year, be tortured by remorse.

We feel sure that the ultimate cause of the Springfield riot is not abhorrence of the initial crime which was its exciting cause, nor race hatred, nor an atavistic return to a state of savagery, as has been suggested by many writers in the popular press. Rather would we draw an analogy with the persecution of witches in Salem, which was bitterly repented by its instigators, and with various waves of hysteria which have taken entirely different forms, such as the St. Vitus dance of the middle ages, and we may even include such apparently foreign manifestations of general error as the formation of fanatic religious bodies, even down to Christian Science.

Perhaps our analogy is incorrect, but we feel sure that so widespread and virulent a manifestation of wrongdoing and one so contrary to general concep-

tions of humanity and so utterly illogical, even when viewed from the standpoint of the average individual participant, in a calm state, must be regarded as a sort of wholesale hysteria or functional insanity. We do not pretend to explain it, but if it is proper to inquire into the mental state of the individual criminal, how much more important is it that a careful inquiry should be made into the phenomenon of a perversion of judgment and conscience involving hundreds of persons simultaneously. By what process does such a disturbance spread through a community so as closely to resemble the spread of a contagious disease due to a micro-organism? We can scarcely imagine that local conditions in Springfield have led to a massing together of an unjailed criminal class which makes it unique among the cities of the world nor that other local conditions have produced a tension nearer the breaking point than in many other communities. We can not consider rape as a unique crime nor as the sole exciting cause which might liberate another such carnival of violence, neither is the presence of a fairly large number of Negroes confined to Springfield, nor can we safely claim that this is the only predisposing cause to similar outbreaks. It is both a matter of scientific interest and one of transcendent sociologic importance to study carefully the various factors which may lead to such outbreaks in other places and at other times. What is the psychologic explanation of wholesale hysteria or mania and what its prophylaxis and treatment?

CREMATION.

THE subject of the disposal of the dead is not entirely a religious or a sentimental one, although these are decidedly most important of consideration; it has also its interest for the physician. The fact can not be disregarded that there is possibility of disease propagation from the bodies of those who have suffered from such contagious diseases as tuberculosis, smallpox or typhoid fever. In New York City this possibility is so well recognized that the bodies of immigrants to this port who have died of a contagious disease are cremated on Swinburne Island in the harbor, unless there is religious or other objection on the part of the victim's family or near friends. In sparsely populated rural districts there is not much danger of contagion by the means here noted. But in thickly populated regions, and in urban cemeteries, where the dead of centuries past have been laid, and which are in juxtaposition with tenements, the danger is not to be ignored. Of course, as we have observed, religious or sentimental objections to cremation can never be

set aside (nor would it be desired to ignore them); and no doubt in some instances such objections would be respected as insuperable.

The London Hospital sets forth an interesting history of cremation in England. Sir Henry Thompson first advocated this practice in 1874; it was upheld by a little band of enthusiasts, whilst against it (such is English feeling when it is wrought up) was ranged the bitterest and most determined opposition. Now, however, active hostility to cremation is a thing of the past; the process is rightly acknowledged to be simple, expeditious, hygienic and reverent. With regard to the latter consideration the advocate of cremation may well call to mind the beautiful saying in the ceremonial of the English church for the burial of the dead, that "there is a natural body and there is a spiritual body." Nevertheless the progress of the idea of cremation is slow in England. "The old, unreasoning loyalty to the slow corruption of the grave survives in the heart of the average Englishman;" only among the wealthy and the intelligent is the practice gaining. One reason for this is that incineration has thus far been rather more costly than burial; but this factor of undue cost is soon to be eliminated. The Cremation Society of England has lowered its membership fees and otherwise extended its operations. It is important that all medical men should treat this question seriously, because the weight of their opinions and influence will largely determine the future course of the movement.

In this country the idea of cremation is generally very well tolerated. In New York State a resident may direct that his body shall be cremated; and in that event his relatives who would otherwise be charged with the duty of burial are authorized if not required to have his body reduced to ashes. And generally speaking, there is probably nowhere in these United States a distinctly prohibitive sentiment against this practice of incineration.

The Committee on Congestion of Population is a permanent organization which has arisen in New York city through the interest which was inspired in the exhibit made last spring in the Museum of Natural History. The wisdom of such a movement is evinced in the sane report recently made by this body to the Building Code Revision Committee. For the present the recommendations wisely seek to cover only two general phases of the situation, the delimitation of the height of skyscrapers and the restriction of vehicular traffic between certain hours in the downtown districts of this city. The skyscraper type however suitable for business purposes, must not be allowed to prevail for tenements; since the requisite amount of light and air cannot be obtained in them.

THE FLEDGLINGS OF 1908.

THE medical schools of this country awarded this year 1,674 fewer diplomas than in 1907; and 2,602 less than in 1906, when the graduates numbered 25,204. This decrease is held to be a sign that practitioners are becoming more competent. A number of schools presumed to be of inferior standing were closed during the current year; whilst nearly all medical institutions of the first class are requiring their candidates to be college graduates. Dr. John Harper Long has declared that of the 160 medical schools in this country in 1907 fully one-half had "no moral right to exist"—which is putting things uncommonly strong; and that the majority of entering students are not properly equipped to understand what should be offered them in the newer pathology and etiology and in bacterial and physiological chemistry."

There can, of course, be absolutely no question whatever that the better educated a man is, both before he has taken up his medical studies, and during his work in medical college, the better practitioner he will become. Nevertheless the time which a man must now give to achieve the medical degree is much too long. The preliminary degree of Bachelor of Arts or Sciences is certainly most desirable; yet we note with the utmost gratification that in some institutions a part at least of the four years which must be devoted to accrue this bachelorship may be given to preliminary studies in medicine, and that the time thus given to medical studies is accredited the student when he takes up his courses in the purely medical institution. Moreover we cannot but feel that the medical student is to-day required to learn much that he will never need in practice, or which he may well acquire by himself during the earlier years of his professional life when (sad to observe) he will have plenty of time for such studies. A knowledge of diatoms or of the comparative anatomy of the Gila monster will avail the young practitioner little when he comes in contact with a transverse presentation or a gangrenous appendix. Besides there are the excellent post-graduate schools now finding place in our civilization which help a man to round out his medical education in those parts of it wherein he finds himself deficient. It is no doubt well that the number of our medical graduates should be curtailed; though some 140,000 medical men in a population of 80,000,000 does not seem so very inordinate. The great trouble here lies, so it appears to us, not in the excessive numbers in our ranks, but in our being unwisely distributed. What madness is it for young men who come to the medical colleges in great cities such as New York, from such hamlets as Squedonk or Pott's Hollow, to de-

termine upon graduation that they will begin their professional careers in these vast communities, in which the overproduction of the supply of physicians is already appalling; what madness is it for them, inexperienced and friendless as they thus are, to doom themselves to a decade or more of deprivation, oftentimes actual want and very real mortification, only at the end of that time (as is so often the case) to give up in despair the unequal struggle; whereas by going into smaller and naturally lovely rural regions, where living conditions are of the most comfortable and should be of the most congenial sort, regions which are oftentimes sadly in need of men of excellent medical attainments, they would almost from the very beginning achieve for themselves an honorable and lucrative livelihood.

Emphatically, again, other things being equal, the better educated a man is, the better a practitioner he will be. But here, in speaking of education, one should connote not only knowledge, but wisdom as well. The assimilation of many facts will not make the best physician. Much else is necessary—discernment, judgment, the faculty of differentiation which is essential to the making of a correct diagnosis; then there are, of course, the humane tendencies, the sympathy one feels for the sick (which is native, and which can not be acquired after the years when one enters a medical school); the psychic attitude by which one is able to suggest health during his ministrations. A man may acquire facts until only his occiput is traversed by a silver fringe, but if he has not these other qualifications, he will fail as a practitioner, and fail most dismally and deservedly. It has been observed that the day of the old-fashioned practitioner is passing. "Empiric, intuitive, sympathetic, his rough-and-ready methods and his friendship with the families of his patrons, whom he has known since their birth, still insure him a practice that may dispense with more modern aids. His successors have much to learn from him. At all events they must learn to be men, not merely scientists." If he is to go let us nevertheless be quick, ere it is too late to assimilate with our newer knowledge as much as we can of the wisdom and humanity which has characterized him.

Medical Maxims.—Our periodically funny contemporary *Life*, submits the following: "It's an ill wind that blows the doctor good; to err is human, to cure divine; a patient in the office is worth two in the grave; never operate during periods of depression, particularly financial; it is better to have operated and lost than never to have operated at all; a stitch in time saves embarrassment; an ounce of pretension is worth a pound of cure; when patients relapse it's nature's fault—when they die it's their own."

BIBLIOGRAPHICAL.

Pathological Technique. A practical manual for workers in pathological histology and bacteriology including directions for the performance of autopsies and for clinical diagnosis by laboratory methods. By Frank Barr Mallory, A.M., M.D. Associate Professor of Pathology, Harvard University Medical School, etc., and James Homer Wright, A.M., M.D., S.D. Director of the Pathological Laboratory of the Massachusetts General Hospital, etc. Fourth edition, revised and enlarged, with 152 illustrations. Octavo pp. 480. \$3.00. Philadelphia and London: W. B. Saunders Company. 1908.

The present edition of this most useful and popular book with students, has been revised and many important additions made to bring the text fully to date. It is intended for practical use in the pathological laboratory and for the general practitioner in case of autopsy. The work cannot be too highly commended.

Pulsating Exophthalmos, Its Etiology, Symptomatology, Pathogenesis and Treatment. Being an essay based upon an analysis of sixty-nine case histories of this affection. By George E. De Schweinitz, M.D. Professor of Ophthalmology in the University of Pennsylvania, and Thomas B. Holloway, M.D. Instructor in Ophthalmology in the University of Pennsylvania. Philadelphia and London: W. B. Saunders Company. 1908. Octavo pp. 124. Price \$2.00.

The object of this essay is to compare the therapeutic measures, surgical and otherwise, which have been employed in the treatment of the cases of pulsating exophthalmos which are analyzed, and to endeavor to determine from these analyses, those surgical procedures which seem likely to prove of the greatest advantage in the control of the symptoms. Particular consideration has been accorded to the orbital operations which have been performed for its relief.

The work is most exhaustive of the subject and includes all cases reported to July, 1907.

General Surgery. A presentation of scientific principles upon which the practice of modern surgery is based. By Ehrich Lexer, M.D. Professor of Surgery, University of Königsberg. American edition edited by Arthur Dean Bevan, M.D. Professor and head of the Department of Surgery, Rush Medical College, University of Chicago; and authorized translation of the second German edition by Dean Lewis, M.D. Assistant Professor of Surgery, Rush Medical College, University of Chicago. With four hundred and forty-nine illustrations in the text, partly in color and two colored plates. Octavo pp. 1041. New York and London: D. Appleton & Co. 1908.

The editors of this work believe that it presents the status of the subject of general surgery, in a more thorough and complete way, than any other text-book, and they should be competent to judge.

The text is divided into general and special surgery, instead of the science and art of surgery and the principles and practice of surgery as is done in this country.

The editors say that practitioners who are interested in surgery will find great interest and profit in studying this book.

The modern conception of infection and immunity are presented in a clear, concise and practical way.

The editors have not hesitated to make such additions and changes as seemed to them desirable and there are many such instances.

Prof. Bevan gives the work his positive endorsement. The text is fully illustrated. The book will, without doubt, have a wide reading in this country, and become a text-book in many colleges.

It is a splendid addition to the literature of General Surgery.

Medical Greek. Collection of papers on medical onomatology and a grammatical guide to learn modern Greek. By Achilles Rose, M.D. 12mo. pp. 262. New York: Peri Hellados, 87 Frankfort street. 1908.

This little book is from the pen of a most enthusiastic scholar in the Greek language, and one who has made himself a martyr to its cause.

Those of our readers that are interested in this subject should certainly possess the volume.

Progressive Medicine, Vol. III, September, 1908. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 285 pages, with 30 engravings. Per annum, in four cloth-bound volumes, \$9.00; in paper binding, \$6.00, carriage paid to any address. Lea & Febiger, Publishers, Philadelphia and New York.

Progressive Medicine occupies a field apart from that of the magazine. It performs for the general practitioner, the surgeon and the specialist a most important service, bringing him knowledge which he could not otherwise obtain, either by his own efforts or in any other publication.

Most of the advances in medicine are of course first announced in periodicals as the quickest means of publicity. Many of them are lost to the man who does not read a half-dozen languages, and this vital knowledge would moreover be limited to very small circles were it not for the existence of this medium for universal diffusion.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Octavo of 534 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1908. Cloth, \$3.00 net.

The ordinary dermatoses and the rashes of the various eruptive fevers, frequently resemble each other to such a degree, as to require for their differentiation a broad experience in both.

In addition to a consideration of the diseases ordinarily included among the exanthemata, there are described the usual and the accidental eruptions occurring in the course of such diseases as typhoid fever, typhus fever, epidemic cerebro spinal meningitis, influenza, malaria, rheumatic fever, dengue, miliary fever, angina and tonsillitis. The part de-

voted to diseases of the skin is designed to present the subject in a brief and practical manner, symptomatology, diagnosis and treatment being emphasized.

It is a fully illustrated work on differential diagnosis just such as every practitioner needs.

Gynecology and Abdominal Surgery. In two large octavos. Edited by Howard A. Kelly, M.D., Professor of Gynecologic Surgery at Johns Hopkins University; and Charles P. Noble, M.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Volume II large octavo of 862 pages, with 475 original illustrations by Mr. Hermann Becker and Mr. Max Brodel. Philadelphia and London: W. B. Saunders Company. 1908. Per volume, cloth, \$8.00 net; half Morocco, \$9.50 net.

Volume II. of this superb work is now before us, and we cannot praise it too highly. The text is written by a host of our leading gynecologists, and is splendidly illustrated, and the whole is ably edited by Nestors of the specialty.

No gynecologist can afford to be without this great work, as everything is brought thoroughly to date in the best manner possible.

It is a grand monument to the specialty which it represents and to the publishers who have made the work possible.

The Baby; Its Care and Development for the Use of Mothers. By Le Grand Kerr, M.D., author of "Diagnostics of the Diseases of Children." Professor of the Diseases of Children in the Brooklyn Post-Graduate Medical School; Attending Physician to the Children's Department of the Methodist Episcopal (Seney) Hospital; Visiting Physician to the Children's Wards of the Williamsburg Hospital, and of the Swedish Hospital in Brooklyn, N. Y., etc. Bound in flexible green cloth, stamped in gold. 21 illustrations. 12mo. of 160 pages. Price, \$1.00 net. Brooklyn, N. Y. Albert T. Huntington. 1908. Sent postpaid on receipt of price.

The book is practical, not theoretical; the author's experience as a specialist qualifies him to write with authority; the language used and the directions given are very plain and free from scientific terms; the illustrations are well selected; and a full index makes immediate reference to any topic very easy. The chronological arrangement of the chapters enables the mother to follow closely the development of the child and discover early such faults as may arise, in which cases consulting the physician is invariably advised.

The book is designed primarily for the use of mothers and to secure their intelligent co-operation with the physician.

Whooping-Cough Cured with Coqueluchin, Its Homoeopathic Nosode. By John H. Clarke, M.D. 90 pages. Cloth, 2s. net. Postage, 2d. extra (America and Canada, 54 cents, post-free). The Homoeopathic Publishing Co., 12, Warwick Lane, London, E. C.

The author states that the clear, glary, tenacious mucus expectorated in whooping-cough contains the virus of the disease; but he offers no proof to this effect. From this expectoration coqueluchin is prepared. A number of cures are claimed for the remedy.

RETROSPECTIVE

Clinical Notes on Laryngeal Tuberculosis.¹—In a fair proportion of cases of pulmonary tuberculosis we have, as we all know, laryngeal complications. These complications are more frequent among men than women, and are reasonably explained by different occupations in which the larynx is exposed to more irritating influences.

In the way of protective and curative treatment, what should be insisted upon? In my judgment two things, essentially: (1) rest for the larynx, and (2) inhalations. Upon the great necessity of rest to the larynx, Sir Felix Simon, of London, and after him I² insisted many years ago. For several years past, many indeed, the importance of this matter lay dormant, as it were, or, at all events, was not insisted upon as it should be. Again it is to the fore, and during the past year or two, in more than one book and in several journal articles it is amplified and accentuated. In some sanatoria for tuberculous patients, when the larynx is at all affected, partial or complete silence is insisted upon. As far as may be, everything is written with slate and pencil or upon a writing pad, and the spoken word is not permitted. Of course, we cannot get complete rest for the larynx in this way because every drawn breath, every paroxysm of cough, every act of deglutition causes laryngeal movement, and alas, at times, discomfort or pain; but we lessen movement as far as possible, and by so doing we afford the patient a better chance of cure.

Are the results such as to justify our hopes and expectations? Frequently they are. Congestion and infiltration have greatly diminished or wholly disappeared. Ulcerations, when limited, have entirely healed. And this has come about not only when the general health and intrapulmonary condition have both notably improved, but also when the latter have remained stationary or deteriorated.

There is nothing new about the great value of the principle of rest in many, very many diseased conditions—both medical and surgical—but, except for a broken bone or diseased joint, nowhere else does it seem more useful, in some instances, than in diseases of the larynx. To Hilton, above other writers, we owe a great debt for wise insistence upon this very important fact of the great utility of rest in the management and treatment of many accidents and diseases—both acute and chronic.

In a few instances it has been noted by myself and others that when tracheotomy had been performed for laryngeal tuberculosis, with marked and distressing stenosis, the condition of the diseased parts were notably and favorably modified apparently or, indeed, obviously, by the rest to the larynx thus afforded.³

As to the later surgical methods of Krause and Heryng by means of punching and curetting—these I must admit rarely make an appeal to me, especially the former. To punch out a bit of infiltrated, somewhat hardened, or oedematous tissue, over the intact arytenoid cartilage, I do not regard as indicated or desirable. Even incisions or punctures of these swellings are only profitable when the tissues are soft relatively and permit serous fluid to exude in apprecia-

ble quantity, as would be the case, of course, in soft oedema of the larynx and when notable stenosis with stridor was thus occasioned. Then, of course, with a properly shielded or curved lancet or knife, very great temporary relief from a very severe and sometimes imminently dangerous condition may be afforded.

If the ulceration be localized, if it be single, or a few ulcerations at most, these may be occasionally curetted moderately with some advantage, and while I have not attempted it myself, I do not object. Such a localized ulcer is not infrequently found underneath—or rather below—the polypoid excrescence of the interarytenoid fold. After the excrescence has been in part or wholly removed by forceps, the ulcer itself may be curetted before a local application is made. It is usually advisable before curetting is done or, indeed, the stronger pigments are applied, that a local anesthetic of cocaine should be made by a swab or spray. This application need not be very strong; a 4 per cent. solution is often sufficient.

Formerly, when I found a patient suffering with laryngeal pain and distress from ulceration and subsequent infiltration or perichondritis, I applied morphine, iodoform, or both combined, frequently to the parts, and thus lessened for a short time the patient's suffering and rendered deglutition somewhat easier in a few instances.

Again, position, notably that of Wolfenden, in which the patient's head hangs over the bed and fluid is sucked through a rubber tube from a mug or pitcher below, will afford relief to swallowing. To-day we obtain more relief of pain probably in all abraded surfaces from the frequent local use of orthoform than by any other known agent. Fortunately, too, orthoform is innocuous, and on this account may be used frequently and by the patient himself whenever required. Leduke's bent hard rubber tube, which may be inserted well back in the throat and through which the orthoform, placed in the orifice of the other extremity, may be aspirated strongly, offers a ready means to the patient to accomplish his purpose. From the experience and reports of many competent observers during later years no application to ulcers of the larynx has received stronger endorsement than that of lactic acid. Applied in 10 to 80 per cent. solution, or even pure, it modifies the ulceration very favorably. Indeed, it not rarely seems to help the complete healing of the ulcer when single and localized. A local anesthetic is often required before and after its application, and especially is this true whenever curetting has been practised prior to the application of the lactic acid. If the lactic acid is applied locally in strong solution or pure, it should be done with care, so as to avoid undue pain and distress. If used on a swab or brush, any excess of acid should be gotten rid of before it is applied, because if a drop should fall into the larynx, notable spasm of the larynx, sometimes very threatening, will immediately follow.

While I am willing to admit the utility of lactic acid, it is now pretty well shown by the report of H. G. Felkin⁴ that its curative effects are markedly increased by complete rest to the larynx, as is afforded by insistence upon prolonged, absolute silence.

Felkin's report embraces several cases which belong to him, and some also to Sir Felix Simon mutually. In those instances of numerous small ulcers outside the larynx known as upper tuberculous laryngitis, and in which the prognosis is specially bad, I disapprove of the use entirely of curetting, applications of lactic acid, etc. They cause considerable distress, are of no possible use, and are not justified at all when we consider the advanced, or very threatening condition of the patient from the point of view of the local pulmonary changes, or the general tuberculous infection, which almost invariably accompanies them.

I now come, finally, to what I regard as by far the most important local measure to be employed by every sufferer from laryngeal tuberculosis at any stage of the disease, and that is the frequent, persistent, long-continued use of the perforated zinc inhaler with inhalations of creosote and alcohol, or, when there is much irritative cough, of beechwood creosote, alcohol, and spirit of chloroform in equal parts. This is no new fact to me, but has become more and more a firm conviction. I have already several times directed attention to it, and I now reiterate it because of its great value. In 1885, at the second meeting of the Climatological Association, I read a paper on antiseptic inhalations, in which I first directed attention to the great value of these inhalations in many forms of laryngeal, bronchial, and even pulmonary disease. Later, in my little work on Inhalers and Inhalants, I again affirmed the value of these inhalations. And in more than one article in medical journals, or in remarks before societies, since that time, I have recurred to their importance. These inhalations modify sputum favorably, diminish its quantity, lessen cough, thus promoting rest, sleep, and nutrition, and general improvement physically, and in some instances appear to be the means through which the patient has gotten rid of tubercle bacilli permanently. I know of absolutely no other method, no other local application, no surgical measure, which will afford anything like the same amount of relief to symptoms and hasten and promote cure in suitable cases to the same degree as will the perforated zinc inhaler with the inhaling fluid recommended.

It is unnecessary for me at this time to give all my reasons why the skepticism made known and objections urged against the systematic and continued use of the perforated zinc inhaler fail completely to establish the value of the objector's or doubter's position. The arguments and statements that I have given previously in favor of the use of the zinc inhaler, with the records of many cases observed by me, may be found in the papers and book referred to. Dr. Austin Flint, Sr., further pointed out its great utility in a series of cases of pulmonary phthisis observed by him and published many years ago. This fact I have already referred to.⁵

Only within a brief period, Dr. Lees, late physician to St. Mary's Hospital, London, England, stated, in his farewell address at that institution, that "during the past two or three years he had treated all his cases of this disease (pulmonary tuberculosis) with continuous inhalations by means of a Yeo's respirator,⁶ on which was placed a mixture of carbolic acid, creosote, iodine, alcohol, ether, and chloroform. The inhaler⁷ is worn day and night, and removed only at

meal times. Six or eight drops of the mixture are dropped on the sponge of the inhaler every hour while the patient is awake, and several times during the night. This rapidly relieves cough, and patients seem to derive great benefit from its use." It is a great help and encouragement to me to find unqualified support of what I have believed for so long a time from such a distinguished and accurate observer who has written truly, well, and with wisdom about several other most important matters relating to practical medicine—notably, the great value of blood letting in pneumonia, and the utility of the salicylates and sodium bicarbonate, combined and in large doses, in the treatment of acute articular rheumatism.

"Dr. Lees closed his address with a comparison of the good results which medical treatment can obtain in acute bacterial invasions with the disappointing failure of the most modern methods of therapeutic inoculation in these diseases—a necessary encouragement in these days of pessimism and skepticism as to the value of the drugs and methods which we have used so long."

Last winter I had a patient under my care at the clinic of the Bellevue and University Hospital Medical College, who had advanced pulmonary tuberculosis. His cough was most distressing and his nights, in consequence, sleepless. Nothing gave him any relief except the use of the perforated zinc inhaler. A case of bronchitis, with distressing cough and dyspnoea, reported by me,⁸ was only relieved by means of the inhaler. A patient of mine suffering from pulmonary tuberculosis at the stage of infiltration with numerous bacilli in the sputum, one year ago, has been more helped, in my judgment, by the continued use of the zinc inhaler than in any other way, or by any other single measure. I consider this patient now almost well, and at times no tubercle bacilli can be found. It is my conviction that, despite healthful surroundings, proper nourishment, correct habits, and suitable internal medication, his condition would be at present nothing like so good if he had not used the inhaler. Indeed, when he had neglected or given up its use for a time, he was not so well and the bacilli recurred.

I saw a patient last winter with general tubercular infiltration of both lungs, which probably involved a great portion of them. This man had one of the most distressing, continuous, unremitting coughs I have ever known. Almost every rational measure was tried in vain, by myself and others, to give him relief. After the use of the inhaler for many weeks he was like a new man, returned to his work, and his cough had almost, if not entirely, disappeared.

I cannot emphasize too strongly, in this connection, certain facts well known to those of us who have had long and watchful experience, and these are:

1. There is a certain proportion of patients affected with laryngeal tuberculosis, just as those with pulmonary tuberculosis, who do not recover, in whom the disease is not even arrested no matter what treatment may be followed. These cases remain stationary, perhaps, for a little while, but even this is doubtful, and, as a rule, despite all our efforts and doings, the disease marches steadily onward and gradually grows worse, until the final end comes.

2. While we cannot predicate absolutely, from the intralaryngeal evidences of tuberculous disease, as to the extent and stage of the tuberculous disease of the lungs, yet usually, if one localization of tuberculous disease is of bad augury, so is the other in the larger proportion of cases.

Of course, there are exceptions, but they are few, and sooner or later the rule will obtain in the greater number of instances and my statement be verified. This fact is important when we consider fairly what should be done in the individual case of laryngeal tuberculosis. Should we employ methods which are expensive, tiresome, distressing, and useless when we know perfectly well, or could if we only would, what the outcome is to be, or should we content ourselves with promoting our patients' comfort as best we can and effect as much euthanasia as possible in a disease which occasionally is one of the most distressing and heart-sickening that afflicts humanity?

Recently my attention has been directed to valuable researches made by W. Jobson Horne, of London. The results of these researches "show that 97 per cent. of the cases of phthisis experienced symptoms referable to the larynx at one time or another in the course of the disease and the investigation further went to show that the routine examination of the larynx, in persons suffering from symptoms suggestive of early pulmonary disease, would enable a diagnosis of phthisis to be made at a time when the stethoscope yields no evidence, and that is at a time when the physician can be of greater service to the patient."

In 1905, Mr. Harold Barwell,⁹ of London, read a paper on "The Choice of the Method of Treatment in Cases of Tuberculous Laryngitis, with a Plea for the Routine Inspection of the Throats of Consumptive Patients," the conclusion of which is entirely in accord with the feelings of Dr. Geo. L. Richards, of Fall River, Mass., and with my own, in regard to the subject. Barwell, quoted by Richards, writes: "Because it (tuberculous laryngitis) is common in all stages of phthisis, because it may cause no symptoms to attract attention, and because the early stages are much more amenable to treatment, and also because it produces one of the most painful and distressing forms of death, I most strongly urge that all cases of consumptions should have their larynges inspected at regular intervals and as a matter of routine."¹⁰

Of course, in obscure cases, despite very careful laryngeal and physical examination, we should not ignore "one other valuable aid to the early diagnosis" of pulmonary and laryngeal tuberculosis, viz., "the use of tuberculin." It will frequently enable us, as Dr. Edward O. Otis writes, "to establish beyond a doubt the existence of the disease."¹¹

We should also admit that occasionally we may be able by means of the Roentgen rays to recognize a pulmonary tuberculous process in an earlier stage than is possible by auscultation, or percussion.¹² Further, the discovery of tubercle bacilli in the feces¹³ in obscure cases will alone sometimes make the diagnosis possible. "The application of tuberculin to the eye in diagnosis, which has been recently introduced by Prof. Calmette, of Lille, France, gives promise of great advantages over the fever test."

I am familiar with the report and discussion before the Section on Medicine of the Academy, in regard to the value of Kuhn's lung suction mask for the hyperemic treatment (Bier) of pulmonary tuberculosis. Neither report nor discussion has convinced me that this mask would prove so useful as the much cheaper, simpler, already widely and long time known perforated zinc inhaler, which I vaunt again with additional enthusiasm and conviction. What Dr. Willy Meyer states in his paper, apropos of Kuhn's mask, I re-echo emphatically for the perforated zinc inhaler.

"It will prove to be of especial value in dispensary practice and in the treatment of such phthisical patients as are not endowed with the riches of this world and cannot afford to leave their homes and their families. I, therefore, believe that the perforated zinc inhaler for the treatment of phthisical patients should be promptly introduced into sanatoria as well as in private practice, thus allowing patients afflicted with pulmonary tuberculosis to benefit from the perforated zinc inhaler."

Eli H. Long adds further testimony to the value of antiseptic inhalations in the treatment of laryngeal and pulmonary tuberculosis. "In pulmonary tuberculosis medicinal treatment has been in recent years greatly discounted, in comparison with out-of-door living, good nourishment, and proper adjustment of bodily rest and activity. But local treatment by the use of antiseptic inhalations, is so rational and so useful in incipient cases, as to easily take first place in the medicinal part of the treatment; and the less perfectly the hygienic treatment can be applied in any given case the more important becomes the inhalation treatment, though secondary in value."

At a recent meeting of the Practitioners' Society of New York, I presented a patient who had been under my care for pulmonary tuberculosis. His disease is now arrested, if not cured. The result is due, as I believe, in addition to proper hygienic measures and a sojourn during the past winter at Asheville, N. C., to the prolonged, faithful use of the perforated zinc inhaler.

In conclusion I would again insist upon two things as most essential in the treatment of laryngeal phthisis locally: 1. Rest to the larynx. 2. Dry vaporized antiseptic inhalations. To me the latter are by far the more important, because if they be used even singly they will effect curative results which the former alone can never accomplish.

⁹Read by Beverley Robinson, M.D., at a meeting of the New York Academy of Medicine, January 16, 1908. Extracted from the American Journal of the Medical Sciences, August, 1908.

¹⁰Proc. Amer. Laryngol. Assoc., 1880.

¹¹Beverley Robinson. Tracheotomy in Ulcerative Phthisical Laryngitis. Amer. Jour. Med. Sci., April, 1879.

¹²Brit. Med. Jour., 1907, i, 1421.

¹³New York Med. Record, 1906.

¹⁴Yeo's respirator is almost precisely similar to the perforated zinc inhaler I make use of.

¹⁵New York Med. Jour., December 8, 1888, p. 617.

¹⁶New York Med. Jour., December 8, 1906, p. 900.

¹⁷British Med. Jour., 1905.

¹⁸Boston Med and Surg. Jour., August 9, 1906.

¹⁹Ibid., September 12, 1907.

²⁰Ibid., September 26, 1907, p. 420.—Percy Brown.

²¹New York Med. Jour., August 31, 1907.—M. Solis Cohen.

Sciatica, states R. A. Fleming (Med. Press and Circular, London, June 24, '08) is of three types: interstitial, neuritis and perineuritis, due generally to heat and cold, rheumatism or gout; neuralgia; pressure on the sciatic nerve or roots of the sacral plexis, as in pregnancy, constipation and the like. For the first type he employs large doses of sodium salicylate and sodium bicarbonate, with rest for the limb. Acupuncture is helpful; six sterilized needles are left in place for half an hour. Injections may be used; but never 80 per cent. alcohol or 1 to 2 per cent. arsenic acid. Electricity is disappointing. Breaking down adhesions and nerve stretching are set forth.

Among Tropical Crawling Insects, states Forest and Stream, only the tarantula is really dangerous, though all are more or less unpleasant. An instinctive watchfulness becomes after a time habitual. By being careful, one can avoid dangerous stings. That of the scorpion is sharp and painful, and it is followed by rapid swelling until a great lump is formed at and about the wound, the glands become painful, and the tongue swelling so that speech becomes difficult. The pain lasts from two to twenty-four hours; serious results are exceptional. The centipede buries its sharp feet in the flesh; and then, biting with its jaws, inflicts deep wounds. It often crawls rapidly over the flesh, puncturing it with burning, needle-like feet, biting continually and "with vigorous rapidity" burying its jaws deep into the flesh. The sores, like burning vesicles, are open for days, a livid sore developing with possibly gangrene and death a few days after. Thus may a centipede's bite, when unattended, become serious. Its back is so smooth, its muscles so supple, that to check it under one's clothing would require such fortitude as would lead to pressing a red hot iron against the naked flesh. Relax the hand for an instant and the creature slips away to continue its course over the body. In jungles they are to be seen a foot long and three inches broad; usually they are less than half this size and fortunately their attacks are rare. The tarantula is most to be dreaded. It sinks its fanglike jaws deep in the flesh; and a poison which oozes out around them is carried into the wound. The soft body of this spider permits it to be easily killed; if there is a way open to escape the tarantula will take it, perhaps not biting at all. One bite by it, however, is sufficient. Days of suffering must be endured, and death may follow. Violent and diffuse tumefaction results; the flesh may become discolored and with the intense pain there is a paralysis which may result in death. If the victim of the bite is in fair health no danger to life is to be feared; but the anemic or those with weak hearts or organic affections or low resisting powers may die from the bite, not only of the tarantula, but of other creeping things as well. "One crawls out from under the tolda with feelings of trepidation, and usually finds that some creeping thing has made the outer folds of the tolda a resting place for the night." Naturally! Such reading as this makes the *Culex Sollicitans* almost bearable.

The French Birth Rate seems to be progressively lessening. In 1907 there were 773,000 children born in France; and 793,000 persons died, so that the population decrease was 20,000. In ten years past this decrease has averaged 12,000 per annum. Race sui-

cide among the French people is increasing prodigiously. One reason seems to be that the peasant is unwilling to subdivide his small farm among many heirs. The family of great wealth inherits by primogeniture, so that the younger sons of younger brothers, if any are born, strive for assured incomes in the professions, and, of course, find children an obstacle to this end. The basic causes, however, obtain not only in France, but throughout the civilized world. Our age is an age of the individual more than of the family; the modern educated man who defers marriage, observes an exchange, is more efficient than two or three of his unlettered forbears. The world may gain, though the birth rate decline.

Chronic Endocarditis During the Stage of Compensation.—S. A. Stein (N. Y. Med. Jour., July 11, '08) rightly individualizes these cases, since every patient reacts indifferently to drugs, dosage, different preparations of the same drugs, different forms of mechanical stimulation. Alcohol, tobacco, tea and coffee should be dispensed with as much as possible; superfluous fat should be gotten rid of (cautiously); great care is essential regarding diet, exercise and drugs. Hygiene is as essential as in tuberculosis. All emunctories must be kept as nearly normal as possible; rest in the recumbent position and sleep are all important. Hydrotherapy is decidedly indicated in insomnia, as a hypnotic and cardiovascular regulator. If drugs are used sodium and ammonium bromide are preferable as less depressing than the potassium salt; the trional-veronal group are very serviceable (when used with the greatest caution). Nearly all cardiac stimulants act as vasoconstrictors; they had therefore best be combined with the iodides and nitrates. Codeia is the safest of the opium preparations; it is both a stimulant and a sedative. The choice between all these plans must be influenced by the patient's age, physical condition and social status. We exclude exercise for the very young and the very old. Before puberty there is nearly always a strong tendency to rapid hypertrophy; and frequently as rapid a degeneration of the hypertrophied muscle. This makes the prognosis bad in most such cases, so that the physical activity and restlessness should be curbed rather than added to. At the other extreme, overexertion being less likely and activities being naturally lessened, once compensation is established the natural hygiene of old age will be that of the accompanying endocarditis, which is very well borne.

Tube of Bacilli Breaks.—It is reported that Prof. Lukomina, of the University of Czernowitz, in experimenting with a view to obtaining an anthrax antitoxin, broke a test tube containing glanders bacilli. His wounds made by the broken glass were cauterized, but at the end of incubation the disease developed. A series of operations on the abscesses saved his life. It is stated, however, that the whole of his staff which had been working with him has been similarly attacked; two have died and four were expected to die.

Spontaneous combustion, declares the Lancet, is well known to be the act of micro-organisms. The firing of a haystack is nearly always the work of a bacterial incendiary. Barns, granaries and spinning works have thus been destroyed by fire owing to the

active oxidizing powers of bacteria. The carefully gathered crop of cotton or hops may fall to the same destructive agencies. Even lampblack, charcoal, coal and peat are found to be readily oxidized by a common bacterium of the soil, which fact may possibly account for the spontaneous heating of coal, for the awful disaster of the coal mine. In human history there have been several appalling disasters arising out of great conflagrations the origin of which has recently remained undiscovered. It is thus possible that the tiny, minute organism has been guilty of unlocking vast pent up forces.

In the treatment of Erysipelas. D. B. Allen uses carbolic acid in greater strength than ordinarily advised (N. Y. Med. Jour., July 11, '08). Considering the disease to be an infection of the subcutaneous tissue and lymphatics by the streptococci, he paints the area involved with the pure acid, going three-eighths of an inch beyond the line of demarcation. This remains until it becomes white, when it is washed off with 95 per cent. alcohol. The penetrating action of the carbolic is a direct germicide; and the ring around the area seems as a strong barrier against the spread of the infection. This treatment causes intense smarting and burning for a few moments, which the alcohol quickly relieves. The burning, however, may continue an hour or more. In cases of extension into the eyelids it is of course impossible to use pure carbolic acid; here a two per cent. carbolic acid solution in ammoniated mercury ointment is to be frequently applied. In Allen's experience the skin heals without scarring.

Psychiatric Prognosis is discussed by F. X. Dercum (J. A. M. A., July 11, '08). There are the following elements in the problem: the clinical type; the presence or absence of actual quantitative mental loss; the systematization of delusions; the fixation of symptoms; age; sex; the presence of morphologic or somatic stigmata; the significance of heredity; the bearing of social status. Dercum takes up these factors one by one in the forms commonly grouped under the name dementia praecox—a name, however, misleading, since confusion and not dementia dominates the clinical picture. With regard to prognosis in mental diseases special consideration must be had. To the presence or absence of acute dementia; the presence of systematization of delusions; the presence of fixation; the social status of the patient as favoring the necessary measures and conditions conducive to recovery. Heredity is important to consider, but it influences the prognosis of a given attack only in a general way; it cannot give a definite clue to either outcome or duration. The bodily condition and the significance of visceral complications are other factors in the prognosis. Generally speaking, marked physical without mental improvement, and the conversely less frequent condition in which there is mental without physical improvement, are both unfavorable. The marked persistence, moreover, of hypochondria, especially regarding psychic or somatic negation, are not infrequently associated with chronic and hopeless conditions. Special factors, such as interruption and cessation of progress, inso influence prognosis unfavorably; an incomplete recovery makes recurrence more probable. Favorable features are regularity; concomitant physical

and mental improvement; the realization by the patient that he has been ill. Of course attacks due to extraneous causes, as in toxic and exhaustion cases, have generally a better prognosis than those which are essentially neuropathic; marked degenerative stigmata may have a certain significance.

That girls are healthier than boys would seem to be the case from statistics set forth in the District of Columbia. Of 1,700 children under 16 examined according to the child labor law since June 30, the inspectors rejected 75 boys and only two girls. A comparative study of the death rates of the sexes at all ages and in nearly every country would show that females must uniformly lead healthier lives than men. Accidental and violent deaths due to dangerous occupations among men and the adventurous spirit of boys have no doubt some bearing upon their higher mortality; whilst the stresses and strains attendant upon the male struggle for existence lowers the mortality more than do the gentler occupations of womankind. Wherever female labor approximates in its nature that of men the death rate rises among the former. Thus the death rate of females in Italy and Ireland is 95 per cent. that of males, as against 90 per cent. in England. However, the death rate for both sexes is notably less per thousand today than in 1900, because of a better knowledge of hygiene as applied and enforced in just such laws as now obtain in Washington, which will afford the rejected 75 boys a better chance for their lives.

Most Extraordinary Mnemonic Feats were done by the late Ainsworth R. Spofford. He was of untiring industry, and his knowledge was of the widest; his retention of details was simply staggering. When, in the old Congressional Library books were, for lack of space, piled up indiscriminately on chairs, desks, tables and the floor, he would go to a pile and select with unerring accuracy the book for which he was asked. Nor was this faculty exercised only in his own library. It is related that on one occasion, having failed to satisfy Lew Wallace by giving him the books on a certain subject in the Congressional Library, he told the General that the volume he ought to see was in the Harvard Library, and gave him its title, library and shelf numbers, and the position the volume occupied on the shelf—"sixth from the south end." Mr. Spofford had a fairly encyclopedic knowledge on all topics of human interest.

The Red Cross Extends Its Work.—The American National Red Cross is now to have for its director Ernest P. Bicknell, who for ten years has been general superintendent of the Chicago Bureau of Charities. Mr. Bicknell's appointment was made by President Roosevelt and Secretary of War Taft; his headquarters after October 1 will be in Washington. The Red Cross was founded for relief work on fields of battle; later it took up the work of emergency in cities stricken with great calamities, such as floods and earthquakes; it will now, under its new director, cover a still larger field of helpful endeavor. It is planned to affiliate with the best charitable organizations in all the large cities in the United States, in order to give aid in misfortunes of less magnitude than those which befell Galveston and San Francisco. With the resulting widespread organization, with doctors, nurses and assistants trained by expe-

rience, the Red Cross will be prepared to act promptly whenever its aid is required.

Young Physicians are Wanted to become connected with the United States Public Health and Marine Hospital Service through examinations—physical, oral, written and clinical—soon to be held under the direction of the authorities at Washington. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must give testimony of good professional and moral character. This is an excellent service; and the government is most generous in providing facilities (apparatus, etc.), for research work. After four years' service assistant surgeons may be examined for promotion to the grade of passed assistant surgeon. One then reaches the grade of surgeon by seniority. Assistant surgeons receive \$1,600 a year; passed assistant surgeons \$2,000; surgeons \$2,500. Furnished quarters are provided for officers and their families, and where this is not practicable, commutation at the rate of \$30, \$40 and \$50 a month according to grade. The tenure of office is permanent.

The External Ear should first be carefully examined before trying to force a speculum or other instrument into the auditory canal. . . . Raising the foot of the bed twelve inches may combat the shock more quickly than the repeated administration of stimulants, and be the less likely to do harm; this procedure, however, is contraindicated in abdominal cases where pus has been found in the peritoneal cavity. . . . Free ammonia in the urine of a diabetic is a bad prognostic sign and its presence is a contraindication to operation in diabetic gangrene, for it shows the presence of beta-oxy-butyric acid in the blood.—*Am. Jour. Surg.*

Prolapse of the liver exists in two forms, states C. A. McWilliams, in an article on Diseases of the Liver Amenable to Surgical Treatment (*N. Y. Med. Jour.*, Dec. 7, 1907). I. Partial hepatoptosis in which there is a downward prolongation of a portion of the liver, usually that part immediately to the right of the gallbladder. This results in the condition known as the lobes of Riedel, who maintained this tongue-like process to be very frequently associated with gall-stones, and is due to the dragging downwards by the gradual distension of the gallbladder, of that part of the liver in its immediate vicinity. When the gallbladder so affected has been drained of its contents by cholecystostomy the abnormal lobe shrinks and the shape of the liver gradually returns to its natural form. "Riedel's lobe" may itself alone become inflamed from trauma or from tight lacing, etc.; correct diagnosis may then be difficult. McWilliams has seen such a case operated on for supposed gallbladder disease, when the latter viscus was found to be normal. The tender tumor was discovered to be an inflamed Riedel's lobe. In another case a lumbar incision was made with the idea of inspecting a supposedly enlarged kidney fixed in a prolapsed position. The tumor was found to be an abnormal and inflamed lobe projecting down from the under surface of the liver, without any other pathological condition. II. Complete hepatoptosis is the second variety of liver prolapse; here there is a downfall of the whole organ. And the abnormality is almost always associated with prolapse of other

viscera, the whole being known as Glenard's disease. Hepatoptosis is generally best treated by the application of a well fitting abdominal supporter, of which McWilliams considers Gallant's corset, which is made to fit tightest just above the pubes, to be the best. A neurotic element is a marked feature in most of these cases, requiring patient medical and mental therapeutics. One should not here be hasty in operation; surgery is required only in the most extreme cases, where a "floating" lobe is persistently painful, or where a wandering liver cannot adequately be kept in position by some mechanical support. Riedel's lobe has in various cases been treated by excision, fixation to the abdominal wall and by cholecystostomy. Total liver prolapse has been sutured in place by various methods.

Anti-Typhoid Inoculations, states Sanborn (*Bost. Med. and Surg. Jour.*, June 4, '08), are practicable. When one contemplates going into a typhoid-infected district, as when civil and military English officers and their families are about to visit colonies; before making a journey into a region where typhoid exists when sanitary arrangements are questionable and where drinking water is of doubtful purity; in the event of an epidemic before the source of infection is discovered when an attack of typhoid fever would be of serious consequence to a particular individual with regard not only to ultimate recovery but also to confinement for a number of weeks and the necessary inability to conduct important affairs; in nurses engaged in general hospital work who are constantly caring for the typhoid patients and who are too frequently in danger of succumbing to infection; and in the case of an army in the field. Every person to be inoculated should have explained to him the symptoms that may follow; that a few hours of malaria will have to be endured. When we propose protective inoculations during an epidemic in persons possibly already exposed we must further explain the possibility of their being infected, and in the septicemic stage, before symptoms have developed, and the probability that if inoculated under these conditions a more serious attack may be brought on than would have followed naturally if there had been no inoculation; also the possibility of infection immediately after inoculation during the period of depressed resistance (negative phase) when there would be an abnormal susceptibility to typhoid fever. Under such circumstances the course of the disease is usually mild.

Abdominal Cesarean section, declares R. McPherson (*J. A. M. A.*, Aug. 29, '08), is the operation of choice when the obstruction to delivery is such that a viable fetus cannot be delivered by the normal passages and the mother offers a fair chance of recovery; the obstruction need not be a deformity of the bony pelvis, but may be caused in several other ways. While elective Cesarean section just before labor or at the very beginning is desirable, the fact that the patient has been for some time in labor does not in itself preclude the possibility of doing the operation. For the best results a particular technique, with skilled assistants, is required; wherefore it should not be undertaken unless the conditions are satisfactory. The special points in technique are: the high incision; the non-delivery of the uterus from the ab-

dominal cavity; the absence of any method of constriction to prevent bleeding, this not being necessary; the method of suture which McPherson describes. Where the conditions here set forth exist, and excluding patients who would die whether they had a Cesarean section or not, the results should show a maternal mortality of not much more than 4 per cent. of the cases; and an almost nil still-birth percentage.

The Liquefaction of Helium.—Science (Aug. 7, '08), reports that Onnes, of Leiden, has found helium to be a liquid having a boiling point of 4.3 degrees absolute, which is not solid when exhausted to a pressure of ten millimetres of mercury, at which pressure the temperature must have been reduced to within three degrees of the absolute zero—that is, about one-fourth of the temperature of hydrogen in corresponding conditions, as that again is about one-fourth of the corresponding nitrogen temperature. If we could obtain another similar drop by the discovery of a gas still more volatile than helium we should have a liquid boiling about one degree above the absolute zero. Science cites some notes given by the London Times upon the steps by which the liquefaction of helium has been reached. In 1895 by the application of the method of sudden expansion from high compression Olsceviski, starting from the temperature of exhausted air, failed to get any appearance of liquefaction. In 1901 Dewar described his repetition of that experiment, using liquid hydrogen under exhaustion instead of liquid air, again without obtaining any trace of condensation. Reasoning from the analogy of his experiments on the liquefaction of hydrogen he showed that by regenerative cooling starting from the temperature of liquid hydrogen we might expect to liquefy a gas whose boiling point might be as low as four or five degrees absolute. In 1902 Dewar gave reasons for placing the boiling point at that figure, showing at the same time how great are the experimental difficulties of getting within five degrees of absolute zero. In 1905 Olsceviski repeated Dewar's experiment of 1901, using higher pressures; and reached the conclusion that the boiling point of helium must be below two degrees absolute, and that after all the gas might be permanent. The same experiment was repeated early in 1908 by Onnes with a much larger quantity of helium than had previously been available, and he at first thought he had obtained solid helium; but found that the appearance was due to impervity in the gas. Dewar again repeated the experiment by circulating helium in a regenerative apparatus, but though he got cooling, he was unable by reason of his inadequate supply of helium to maintain the cooling process sufficiently long to reach liquefaction. At last Onnes, on July 10, definitely settled the matter. As new and richer sources of helium have been discovered, and its separation being enormously facilitated by Dewar's charcoal method, it is possible that helium may become sufficiently abundant in cryological laboratories to be used as liquid hydrogen as now used in physical research.

Pregnancy, states French (Lancet, May 8, 1908), may be influenced by suppurative calculous and tuberculous renal lesions. In a case reported by him the course of events was renal calculi, hydronephrosis,

pregnancy, microbic infection of the kidney, pyonephrosis, suppurative pyelonephritis, cystitis, uremia and death. Pregnancy and renal tuberculosis are practically never associated. Where non-suppurative renal affections are manifest pregnancy will be hurtful to the kidneys; and women suffering in this way should not marry. In two groups of cases the renal disease is directly attributable to pregnancy; those in which renal symptoms develop during the middle months; and those terminating in eclampsia. French agrees with those who regard these kidney changes in pregnancy as essential similar to those which may occur in scarlet fever; the difference is not intrinsic but only one of degree and acuteness, between the renal changes in eclampsia cases and those where renal edema is a prominent symptom less late in the pregnancy. Albuminuric retinitis is more common in pregnancy kidney cases than in any other forms of nephritis. Twin pregnancies harm the kidney in eclampsia cases more than in those of general edema without eclampsia. There is a high mortality among the children of nephritic mothers. The obstetrician should treat eclampsia; the nephritis of the earlier months, however, seldom calls for radical measures. Rest in bed, with suitable medication and diet, ameliorates the renal symptoms in many cases. Pregnancy seems to be one of the causes of tetany, differing in no essential way from adult tetany due to other causes; the latter develops during the later months as a rule, but the spasms are rarely met with during labor. They may occur for the first time during lactation. Pregnancy does not predispose to a primary attack of appendicitis, but may light up another attack in a person who has previously suffered from the disease—probably by stretching or breaking down old inflammatory adhesions as the uterus enlarges and rises out of the pelvis. It is not certain whether the coexistence of pregnancy makes an attack of appendicitis more severe than the average; yet the former does increase the risks and dangers of the latter; even after drainage of the abscess a septic salpingitis or endometritis may be set up. The fetus is born dead in 90 per cent. of such cases. Operative measures should generally be accelerated rather than postponed in appendicitis cases complicated by pregnancy. It is most undesirable that the pregnancy should be artificially terminated; adhesions tending to localize the inflammation may thus be broken down; both the mother and the child will have the best chance by early operation.

Gonorrhoea.—F. Forchheimer (Bost. Med. & Surg. Jour., Aug. 6, 1908), considers that the morbidity of gonorrhoea is diminishing, except as regards the American army and navy. More than 54 per cent. of all males have the disease during their lifetime; we have not sufficient knowledge of the facts to state the proportion among women. The small number of Forchheimer's cases of sterility do not justify any positive conclusion. Prevention of conception is the cause of "one child sterility" in most instances. Forchheimer has found that the statements of men and women who are propagandizing for the suppression of venereal diseases have much overestimated the frequency, the complications and the dangers of gonorrhoea; this has been notably so regarding the statements of genitourinary specialists; with few ex-

ceptions these observers have magnified their office. Besides many have been satisfied with the old figures of Ricard (that 80 per cent. of all males have had gonorrhoea) which, taken in association with the views of Nöggerath would make it appear that very few persons of either sex could escape having the disease. "If to this there are added the remarkable mathematical gyrations of Blaschko, which are supposed to represent statistical methods, it is little wonder that the layman becomes an anti-gonorrhoeic howling dervish." In Germany especially the women suffragists speak of an almost universal "poisoned wedlock" due to gonorrhoea, because no man enters matrimony healthy and pure and his wife must suffer for the sins of his youth; of sterility increased, wherefore countries are depopulated. Statistics unquestionably show that much damage is done by gonorrhoea; therefore the first against it is a righteous one. But no righteous cause is aided by such lurid statements as have recently been made.

Mechanical Vibration in the Treatment of Constipation and Pelvic Conditions.—M. L. H. SNOW (Med. Rec., Aug. 8, 1908), lays down the following principles: The vibration should possess the necessary rapidity and length of stroke demanded to meet a given condition, and exerted pressure must be painless; the rapidity, stroke, pressure or non-pressure should be governed by the indications and the patient's reactionary resistance; the interruptions, when using interrupted vibration, should be limited in number to avoid exhaustion in nerve power; the intervals of rest should be three or even four, times as long as the period of impulse contact to assist in perpetuity and fixidness of the effect; the periods of contact and rest should be rhythmical in the administration of interrupted vibration; vibratory effects should be applied to aid or promote functional activity of a part without altering the integrity or unfavorably affecting the normal activity of the part. Mechanical vibration in conjunction with dietary measures and in appropriate cases exercises directed to the compression of the bowels and liver, makes up the best treatment for constipation. When carefully administered it is absolutely painless, harmless, most gratifying in its results; and consequently worthy of a trial by the general practitioner. We must regulate the quantity, quality and kind of food, which must at the same time be nutritious and not too concentrated; the digestive and other functions must not be overtaxed.

The Gastric Contents.—For three or four days before the test meal is given, states W. H. Willcox (Lancet, July 25, 1908), the patient should be kept on light diet; no drugs during that time. The meal, made up of a pint of very weak China tea with milk and sugar and a piece of thin buttered toast, is given in the morning. The dextrin in the toast is an efficient stimulus to the gastric glands. In this test meal very little proteid or nitrogenous bases are present, wherefore much of the hydrochloric acid secreted by the stomach is present in a free state. It is possible, therefore, in a case of cancer, for free hydrochloric acid to be present. The gastric contents are to be drawn off without dilution—from 3 to 4 ounces in a normal stomach where there is no obstruction. In cancer and mucous gastritis the contents are slimy and filter badly. The total acidity

should always be estimated; but too much importance should not be attached to the research. In cancer the acidity is usually low; but it may be high from an excess of organic acid. Hydrochloric may be present as free acid; as combined with proteid and organic bases (when it is physiologically active); and as combined with inorganic bases (physiologically inactive). Günsberg's is the best test for free hydrochloric acid. In gastric cancer free hydrochloric acid is scarcely ever present, as fast as it is secreted it combines with the mucin present; it is rare in children because milk is used for the test meal. Active hydrochloric acid (free plus combination with organic basis) is the most important estimation in gastric chemical analysis. Willcox uses a modification of Valhard's method of estimating chlorides. It is improbable that the amount of hydrochloric acid in the gastric contents is lessened or absent when there is cancer elsewhere than in the stomach but not in that organ. The presence or absence of lactic acid is not important. The various organic acids are present in large amounts in gastric cancer and other conditions where much bacterial ferment is going on in the organ. Mucin is usually present in cancer; and absent in ulcer and hyperchlorhydria. Sulphocyanides should be tested for; when present with mucin they indicate that the latter may come from the saliva. Estimation of the ferment activity is most important; Willcox has devised a new method based on the fact that the amount of rennin present in the gastric contents is usually in proportion to the pepsin.

Hazen's Theorem.—Pure drinking water is mostly considered desirable in relation to typhoid prophylaxis, and it is with this idea in view that cities spend millions in filter beds and like projects for the purification of contaminated waters. It has been thought sufficient to justify this expense of this one disease could thus be eliminated. It has, however, been observed in several large towns that a larger decline in the general death rate has followed the substitution of pure for impure water. Allen Hazen has upon such data formulated the theorem that for every death from typhoid fever avoided by the purification of public water supplies, two or three deaths from other causes are also prevented. And W. T. Sedgwick and Scott McNutt of the biological department of the Massachusetts Institute of Technology have in Science submitted their own observations in corroboration of Hazen's theorem. A statistical study of the result of purification of polluted water supplies in Lowell and Lawrence upon the total death rate (checked by a comparison of similar data from Manchester, N. H., a city of the same class) reveals that while the decline in total death rate was to a large degree accounted for by the decrease in typhoid fever, yet a still greater part of the decline was due to a diminution of deaths from such other causes as pulmonary tuberculosis, pneumonia, dysenteries and infantile diarrhoeas. Is this diminution, asks these contributors to Science, due simply to the cessation of infection; or to some enhancement of vital resistance; or is it due to the co-operation of these factors? Must the diseases here enumerated be added to the list of water borne diseases, or does the use of impure water depress the organism's vital resistance?

MISCELLANY

A tuberculosis pavilion is being erected in Albany by the Central Federation of Labor. This building is the first of its kind in this country by the labor federation, and the organization has been partly aided by the Albany Tuberculosis Committee.

Dr. Charles Harrington, who was for nine years a chemist of the State Board of Health in Massachusetts, died on September 11, in England; he had gone abroad with Dr. John Bowen, of Boston, the two physicians having planned a tour of England and Germany together.

Bubonic Plague from a Squirrel's Bite.—A boy bitten by a squirrel in a Los Angeles park evidenced bubonic plague three weeks after the bite. The squirrel bit the boy in the hand; it was found that squirrels in this park had the disease. No other cases have developed, however; nor is any spread of the disease at all likely.

The Alternating Heart, states Hering (Munch. Mediz. Wochenschr., July 7, '08), is due to a part to the muscular fibres not responding to the stimulation at the time of the lesser systole. As this partial loss of reaction is present at the time of the lesser systole, but not at the time of the greater, there is a periodically recurring partial asystole.

Lip Reading for the Partially Dumb.—It is stated that a society has been founded in France to teach lip reading; and an appeal has been made to physicians to urge the partly deaf to learn the art. It relieves the ears of the afflicted of the strain of their efforts to hear, by which the auditory nerve is exhausted, and the deafness made progressively worse.

Postpartum Bacteriemia warrants the gravest prognosis, declares J. E. Welch (Bull. of the Lying-in-Hospital, N. Y., March, '08). A prognosis cannot be given from the number of colonies per c.c. of blood, nor from the length of chains found in case of streptococcal infection. Virulence in the rabbit does not correspond to virulence in the human. In 46 cases the recovery percentage was 64.

Died Tortured by Ants.—It was reported that a consumptive died at the County Hospital at Los Angeles in California as a result of laying helpless under a tree nearly three days, whilst red ants fed upon his body. He had been on his way to an ostrich farm and fainted, remaining thus for two days. He tried to attract the attention of passersby, who paid no heed to him, evidently thinking him drunk.

A day camp for tuberculosis patients has been opened on the roof of the Vanderbilt Clinic by the American National Red Cross in co-operation with the college authorities. At least forty patients will be cared for the year round, at first during the day only. The Clinic will put the roof in condition and furnish medical supervision for the camp. This effort marks the entrance of the New York County Red Cross into the crusade against tuberculosis.

A \$2,000,000 legacy was left the New York Post-Graduate Hospital by Frederick Cooper Hewitt, of Owego, New York. This gift will be utilized to develop the institution into the greatest medical school in the world. Dr. A. F. Chace, the secretary of the corporation of this great institution declares:

"The gift will make possible the carrying out of plans which have long been cherished by the board and which will place the Post-Graduate School ahead of all the foreign institutions of its kind."

An "Ozone Craze," which has been agitating London and the Continent, seems likely to extend to this country. A plant for manufacturing this gas has, it is stated, been built in Pittsburg after a Belgian model, and its product will be used in a new propaganda against pathogenic bacteria. The propaganda will be a foolish one. Ozone has undoubted therapeutic value; but the breathing of pure oxygen and ozone will be decidedly dangerous for athletes or other healthy people who desire to be stimulated by this means.

The Spirochaeta Pallida can be demonstrated, declares W. C. Quimby (Bost. Med. & Surg. Jour., Aug. 6, 1908), by the method of dark field illumination, with or without subsequent examination of a stained specimen. It should be a routine practice to examine all suspicious lesions to this end. The organism has a definite morphology and can be differentiated by careful microscopic examination. The organisms are not always numerous on the surface of the lesion; the method of obtaining them is therefore of importance. A most satisfactory way is that of suction.

Toothsome Pains.—The London Daily Mail reports a case illustrative of the effect of the imagination in causing disease and in the subsequent cure. A professional man on a visit took out his four false teeth while shaving, but forgetting the fact and failing to find them later concluded he must have swallowed them accidentally. Upon this his sufferings began; a physician who was summoned prescribed emetics which were unavailing. The excruciating tortures continued until a maid brought the missing teeth, which had dropped behind the dressing table; whereupon the sufferings instantly ceased.

Red Cross Plates for Doctor's Automobiles.—Many complaints having been made by Pittsburg physicians that corner men and patrolmen often stopped them while they were responding to urgent calls, Public Safety Director E. G. Lang decided to get a Red Cross plate made, to be used by the physicians when making hurry calls. The patrolman must check the number of the car, if he thinks it is going beyond the speed limit. The physician will afterward have to give his reason for his unusual speed, with the name of the patient he was called to attend. This is an excellent plan, except for the giving of the patient's name.

Mme. Curie, who with her husband discovered radium, has been elected a corresponding member of the St. Petersburg Academy of Sciences. Mlle. Gausel, M.D., has been appointed director of a clinic of Montpellier University—the first time a woman has occupied such an office. Mlle. Sarah Broida has been made ship's physician on a packet boat of the Mixte Steamship Company, plying between Marseilles, Africa and Sicily. Mmes. Louise Briand and Jeanne Menard, both graduate doctors of medicine, act at ship's physicians on two of the largest Mediterranean steamers. Thus is French medicine opening its doors to women.

THE NEEDLESS SLAUGHTER IN TYPHOID FEVER: THE RATIONAL TREATMENT FOR THE DISEASE MAKES THE DEATH RATE ALMOST NIL.

Hydrotherapy and Therapeutic Fasting Solve the Problem.

BY CHARLES E. PAGE, M.D., BOSTON.

THE story of typhoid fever under the prevailing treatment is a fearful one, indeed. It is estimated that more than 50,000 lives are lost in this country every year from typhoid fever (Prof. Victor C. Vaughan, of Michigan University). Placing the value of each human life at \$1,000, this means a loss to the nation of more than fifty millions of dollars (\$50,000,000). To this must be added much money for physicians, nurses and medicine, as well as all the distress arising from long, painful illnesses, funerals, and all the rest of it. Moreover, we note that in all cases of life insurance the question is asked, "Have you ever had typhoid fever?" and the significance of this question is well indicated by the declaration of life insurance statisticians, whose business it is to know, that of all typhoid fever patients who survive the attack, one-fourth die finally of consumption. It is not far out of the way to place the number at about 300,000, the number of patients that do not die outright, and therefore we have about 75,000 deaths from consumption, with the consequent loss to the nation of as many millions of dollars (\$75,000,000). Again, we may well consider all of the distresses, costs for medicine and nursing, arising from these illnesses. The treatment in vogue, as is well known, consists of forced-feeding, the administration of drugs for the symptoms as though the symptoms (high temperature, for example) were the disease, instead of the indication of nature's efforts to cure the disease. The statement may well be made at this point, that to down the temperature by means of antipyretic drugs, is to down the vital forces of the patient, whereas the physician's true business is to augment these forces by every means in his power.

In this connection, we may well have regard for the dictum of Dr. Simon Baruch, a distinguished physician and recently appointed to the chair on Hydrotherapy at Columbia University, New York, pronounced before a medical association in New York some years ago, as follows: "The chief advantage of the medicinal antipyretics," he said, "seems to be that through their employment the typhoid fever patient is enabled to die with a fairly normal temperature!" Even in the hydrotherapeutic management of these cases no skilful practitioner having a fair understanding of the disease and the application of the treatment ever makes use of it for the purpose of directly reducing the temperature of the patient. His aim is to use it in a way to brace the heart and the entire nervous system; and this being accomplished, the chief remaining thing is to spare the intestinal tract from being transformed into a cesspool, by withholding food until the patient is convalescent and his alimentary system in condition to digest and assimilate food substances. Until this point is reached, every sip or morsel of food, liquid or solid, is ingested solely for putrescence and blood-poisoning from the absorption of putrescent material from the intestine.

At an early stage of malaise indicating the ap-

proach of typhoid fever, a brief therapeutic fast, with all the fresh, soft water the patient may crave (but, preferably moderately hot) for the purpose of maintaining the normal fluidity of the blood, would suffice to abort the disease, no matter what the theory of its origin may be; and long, painful and fatal results would in most instances be prevented. The results in one series of cases treated by Drs. Brand, Vogl and Juergensen in Germany, these gentlemen being distinguished regulars, by the way, would alone seem to prove the above statement. In 1,223 cases there were only 12 deaths, or 1 per cent., and the most significant thing in this matter is, that not one of these 12 deaths occurred in any case that came early under the treatment (Baruch).

In my ordinary practice I have over and over again illustrated all that I have herein claimed for what I call the rational, or physiologic treatment for the disease under consideration; and I will remark in this connection that the principle applies to all diseases of high temperature, regardless of nomenclature. Singular as it may seem to readers of this paper, I have been called upon to direct by telegraph the management of typhoid fever cases as far distant as St. Paul, Minn., and in 1887 I assumed the direction of an important case, the patient having been the small son of a prominent New York banker, who wired me as follows:

"My son, Donald, 5½, has typhoid fever. His temperature this morning is 104½. Some delirium. Family physician in charge, is giving aconite every four hours, milk every three or four hours. Wire important directions for treatment and confirm by letter." (Signed, G. D. M., New York Stock Exchange.)

My advice was, in brief, to stop all medicine and food; give moderate portions of moderately hot water at frequent intervals; use cold compress for head symptoms; allow all the fresh water desired; apply damp bandage around the body from armpits to hips, and freshen the damp folds as often as they become hot.*

I exchanged telegrams with the nurse twice a day for a couple of days, writing a careful letter of directions immediately after sending the first telegram and keeping in close touch with the nurse by wire and letter until the little patient was on safe footing. On the fifth day the father reported that the lad was "cool and comfortable, playing with his toys on the bed, and enjoying his permission to eat." In this case there was a fast of but three days, all that seemed demanded. He went on to complete recovery. It was the desire of the father, and also my own wish, for the family physician to remain in the case throughout; but, failing to understand the value of my counsel, and distrustful of its effects, he was permitted to withdraw from the case.

In the New York case the illness had endured for only nine days, after two weeks of malaise; the disease had been diagnosed by the family doctor and a consulting physician as typhoid fever, and the opin-

*The "damp bandage" is formed as follows: two folds of coarse towel wrung tightly from cold water, placed on two folds of same, dry, and all brought around the body, lapping first the damp folds several inches, and then the dry folds, all snugly pinned.

ion given that no expectation could be entertained of convalescence before twelve days more. Thus, the traditional "three weeks' run;" whereas, it transpired that the little chap was on the street before the expiration of the twelve days.

Another case, of recent occurrence, which cannot fail to impress the mind of every reader, since it was undertaken after three weeks of the ordinary routine treatment, forced feeding and drugging to the limit, and had reached a point when the attending physician had given up all hope of saving his patient's life and had announced that he could not live beyond three or four days at the longest. This was on Saturday, September 5, 1908. The following telegram will indicate my entering upon the case.

(Copy.)

Presque Isle, Me., Sept. 8, 1908.

Mr. B. E. Whitten, 267 Summer St., Boston.

Failing; hiccoughing constantly 24 hours; two hypodermics; get Dr. Page's advice.

(Signed) "Grace."

Presque Isle is about 500 miles distant. The telegram was from the wife of the gentleman addressed, and related to the case of her father, to whose bedside she had been called to nurse him in typhoid fever. I have been the family physician of the W's for some years; hence the appeal for my help when disaster seemed inevitable. Now, September 28, after 20 days' application of hygienic treatment, directed by daily and sometimes twice daily telegrams, in response to telegraphic reports from the nurse, together with frequent exchange of letters, the patient is convalescent and thriving satisfactorily and will shortly be enroute for this city with his daughter, where at her home he will soon be up and about his affairs.** In this case there was no call for much in the way of active hydrotherapy, none at all for cold baths, as the patient's vitality had been so depleted by the forced-feeding (6 eggs and 2 quarts of milk daily, swallowed with loathing by the sufferer) and drugs per mouth and hypodermically to down the symptoms, promote a semblance of sleep, etc., that the temperature was subnormal. In order to instill a little life into the almost lifeless body I directed a hot fomentation of the feet and legs, a fresh blanket folded and barely saturated with hot water and wrapped around the feet and lower legs, and this enveloped in several folds of stout sheet to retain the heat as long as possible with the help of a hot water bag, altogether for about an hour.

For the hiccough a cold compress was placed over the pit of the stomach to be freshened as often as it became hot. This had a soothing effect; but in spite of all we could do the hiccoughing continued more or less severe for nine days and until the surcharged bowels were emptied and nature's healing process inaugurated. The flowing of putrescent material mixed with clots of blood was fearful, indeed, the patient having no control whatsoever over the bowels. This was continuous for several days and nights;

**Oct. 1st. Mrs. W., with the patient, reached her home this morning about 9 o'clock, as I learned by telephone. At 3.30 I called to find our patient "comfortably sick." His complexion is clear, eyes clear, heart and temperature normal; appetite good, bowels moving normally, and strength improving, so that he is able to rise and move about the room, and no further anxiety is felt as to the outcome of the case.

but, finally, under the influence of fasting, little portions of hot water, which at first were administered in teaspoonfuls through his almost closed teeth, but kept up as fast as it could be absorbed, the tide turned and evidence of convalescence became more and more marked.

For brain symptoms, congestion and more or less delirium, a cold compress was kindly pressed about the forehead and top of head, the hair wetted so as to favor the soothing impression of the cool compress directly to the scalp, and this was employed according to the nurse's judgment of its need. The fast lasted for fourteen days; then orangeade in moderate portions was given several times on the fifteenth day, when the patient was allowed an orange, pulp and all. Thereafter, he ate moderately of oranges and grapes during the forenoon, and had two moderate meals of plain milk, a small cupful at each feeding, during the afternoons. But, when we come to think that all this wretched suffering, risk to life, night and day nursing and all the attendant distresses might easily have been prevented by the simple means of fasting for a few days from the onset of the patient's illness, if he, himself, had been wise enough to apply the remedy, or if the attending physician had understood the first principles of sick-room dietetics and had acted accordingly, and that this case is typical of what actually transpires in all long-drawn and fatal cases of typhoid fever, it does seem pitiful, indeed.

Dr. George L. Peabody in a paper read before the Practitioners' Society of New York a few years ago said: "The results in the treatment of typhoid fever continue to be so bad in general in this country as to constitute a chronic opprobrium to the art of medicine here. We do not seem to be capable of approaching the lower rate of mortality which has rewarded the efforts of the medical profession in many cities of Europe. Those who still adhere to the expectant plan of treatment," he continues, "are still in the large majority here. This plan seems in a general way to make us quite content with our bad results, and to lead us to expect the patient to die if he become gravely ill." Later on, Dr. Peabody, after describing the routine procedures prevailing in hospital and private practice, comments as follows: "This method of treatment—if it be proper to call that a method which seems to lack all true system—is often dignified by the appellation, rational. In fact, however, it would be difficult to devise a more irrational method than the symptomatic method, carried to its logical issue." Still further on, and after reciting certain statistics concerning the hydrotherapeutic treatment for typhoid fever, he says: "It seems to me, that any one at all open to conviction by statistics cannot but admit that the statistics of Brand make a marvelous showing for the cold water treatment. After reading these statistics it would seem as if all other plans were of insignificant value when compared with this one."

Notwithstanding the fact, that this subject has been over and over again discussed, and the improved treatment urged upon the attention of the profession, there is still a lamentable lack of interest among medical men in general concerning non-medicinal treatment for disease. The reason of this

is not far to seek; the medical schools give their students almost nothing in the way of instruction in hydrotherapy, and it is the universal practice with the professors and with hospital physicians to feed early and often, as if the questions of digestion and assimilation, instead of mere swallowing, were not at the bottom of all true feeding. Here and there an individual I find who seems to appreciate this point; but in general the practice of forced-feeding continues, and our enormous death rate results, I am sure, largely because of it.

Sir William Jenner, a distinguished English physician, in an address before the Midland Medical Society of Birmingham, more than twenty years ago, referring to the vicious effects of forced feeding, said: "I have seen the patient restless, sleepless, his temperature raised several degrees above what it had previously been, vomit, eject a quantity of curd, and at once the restlessness cease, the temperature fall, the skin become moist, and the patient drop into a quiet sleep. All the threatening symptoms vanish with the ejection of the offending material. Or, the undigested curds may accumulate in the bowel, inducing flatulent distention, pain, restlessness, and increased febrile disturbance. Under these circumstances I have seen an enema bring away a large vesselful of offensive, sour, undigested curds. Or, again, the undigested curds may themselves (and this, he says, has not been an uncommon consequence of milk diet in my experience) irritate the bowels, and produce and keep up severe diarrhea."

Well might we ask at this point whether we need to look further for the cause of perforation or other or all complications, than to the running down of food in face of absolute incapacity for digestion?

It has to be confessed—and this, perhaps, constitutes the chief hindrance to progress along this line—that skilful natural treatment, chiefly hydrotherapy and therapeutic fasting, might often prove to be "bad business" for the family physician, especially for the young practitioner striving for a paying practice; for, if he skilfully abort a case of pneumonia, typhoid fever, or other acute disease, and his patient is shortly on the street, he gets no credit for "curing" a bad case. "It was only a mild attack," it would be said; or, "It wasn't typhoid fever, after all!" On the other hand, if one of his competitors had treated that same case in the way that it is the object of this paper to condemn, and there had been several weeks of painful, costly sickness, with a day nurse and a night nurse in constant attendance, and daily calls of the physician—clever fellow, so kind, so sympathetic, and so well-intentioned—this doctor, whether his patient lived or died, would have gained much reputation and a big honorarium. In the one case it would be said that he had cured one of the worst cases; in the other, it would have been set down as "the will of God!"

The late Dr. John Forsyth Meigs, in a lecture delivered at the Pennsylvania Hospital in 1879, said: "When I stand by the bedside of a severe typhoid case, and see the patient motionless, insensible, dead to all the usual senses of the living; when I look at his half-closed eyes, his gaping mouth, his dried and fissured tongue; when I brush the unheeded flies from his poor, unconscious face; and when I touch

his hot and burning skin, I ask myself into what lower state the human body can fall. Not only has the patient lost all appetite for food, not only is he dead to all that surrounds him, but his hot and withered body, his dry and pasty mouth, filled with desiccated crusts and sordes, knows no longer even the sense of thirst. This has been the last sense of which he has been deprived. So long as he retained any consciousness at all he would ask for water. Now he feels not even this great want. It is in this crisis of his life that he is to be saved, if saved at all, only by the constant care of his physician, nurses and relatives. And woe to the physician who can look on such a sight and not yearn to know all that his art has acquired through centuries of experience and study."

Nor drugs, nor prayers, nor tears, nor the laying on of hands, nor the most solicitous care on the part of physician, nurses and relatives, can avail to raise these dying subjects so long as the efforts put forth are unwisely directed. Prevention is the only certain cure; but a complete reversal of the treatment may at any possibly curable stage turn the tide in favor of recovery, as happened in the case of the poor fellow in Maine, the history of whose case I have given.

It is my firm conviction that the greater proportion of the fifty thousand lives lost in this country from typhoid fever, and of the serious effects upon perhaps three hundred thousand typhoid patients who are said to recover from the disease, the greater part of all this deplorable mischief results from the mistaken treatment rather than from the disease itself.

Outside of the practice of here and there a physician who has learned the proper treatment for typhoid fever, there has been little or no improvement in the treatment of this disease, either in private or hospital practice, during the past one hundred years. We have the history of typhoid in the Massachusetts General Hospital for the past seventy-eight years, thanks to Dr. Fitz, whose tables from the records show that from the year 1821 to 1859 the mortality in typhoid fever was 12.75 per cent., and from 1859 to 1899 it was 15.5 per cent. Certainly, this is a very bad showing for medical progress, so far as concerns this disease.

Chrisippus won the title of "irregular" by opposing the prevailing practice of his time of active purging and bleeding, and he introduced the hunger cure (doubtless meaning abstinence till the patient was hungry), which is the dictate of good sense, as it seems to me; and Erasistratus prescribed fasting as the most efficacious remedy in all febrile and inflammatory processes; so that none, who regards antiquity as evidence of the value of a remedy, may sneer at the idea of giving the stomach a rest when this organ is in an exhausted state.

How often I have visited a fever patient day after day for a week or more, observing the tongue changing favorably, the temperature kept down well, strength steadily increasing, and all this on a diet of fresh, or moderately hot soft water, until at some point I have suggested that perhaps the time was ripe for feeding, only to have my patient query whether it might not be safer to put it off another

day or two! So far as the safety is concerned in fasting any fever patient for any required length of time, I am apt to drop all anxiety regarding the outcome of the case if this part of the treatment is strictly adhered to, speaking of the great majority of cases that come early under treatment. And at no stage of any case do I ever hesitate to apply the principle in question, in neglected or badly treated cases coming under my care, as, for example, in the rather remarkable case in Maine already described. The fact of the matter is, that the longer the stomach and bowels have been subjected to the forced-feeding outrage the more demand there is for such rest as the expert dietist may deem necessary. These patients must, indeed, be nourished; but, as Dr. Henry remarks, "the question of nutriment is a relative one, depending upon the immediate wants of the system. To a person perishing from thirst nothing is so nutritious as water. The strongest argument for the Brand bath treatment in typhoid fever is that it prevents tissue degenerations; especially of the heart, which are generally ascribed to long-continued drought. We do not attribute the desiccation of vegetables during the torrid heat of summer so much to the presence of heat as to the absence of water, and the facts with reference to our own tissues during the heated term of a fever are precisely analogous. In a word, our bodies, in health, are more fluid than solid, and cannot perform their functions unless this fluidity is maintained." (Frederick P. Henry, A.M., M.D., in *A System of Practical Therapeutics*.)

No ordinary diarrhea can withstand the effects of a three days' fast, and during an extended fast there is a normal closure of the bowels during the entire period. "Closed for repairs," says nature. In the course of a day or two, or at all events soon enough, on resumption of solid food, the bowels resume their normal action, with never any demand for physic or laxatives, nor, as a rule, for even an enema. "Physic is the most difficult medicament for the system to withstand," wrote Hippocrates centuries ago; and it would be well for the public if physicians to-day appreciated the great significance of this fact.

In my own practice, I never allow the ingestion of a morsel of any sort of food, except water, or perhaps a little orangeade or lemonade, until my patient is practically convalescent; and highly as I value the Brand bath for typhoid fever, which I have used to the limit for twenty-five years past, I would without hesitation if shut up to the choice, trust to the "damp bandage," with fasting, rather than to the most expert hydrotherapy, with constant feeding. The fasting plan practically prohibits "complications" and "relapses," commonly regarded as the effect of "a cold," when, in fact, they are the product of indigestion and "reaction" from the antipyretics and stimulants so freely employed by most practitioners.

The fasting patient is scavenging on, and thereby eliminating, the impurities with which his system is saturated, and which really constitute his disease; on the excess of fat, if stout, and on the unassimilated nutritive matters which abound in the interstices of the tissues of most fever subjects. He is

for the time being a sort of cannibal; but it is "Dr. Jekyll" devouring "Mr. Hyde," and the diet is well suited to his needs. With an abundance of soft water, which is best supplied for the most part at a temperature slightly above that of the blood (though the patient should not be denied a draught of fresh water when desired), he will be well sustained. For adults, from 2 to 4 ounces every half hour to two hours, according to the amount and complexion of the urine. It is given moderately hot, and always with a placebo in some of the portions. Fasts of three, five, eight and ten days have been so common in my practice that they have long since ceased to be at all novel. When we learn that a Chicago lawyer afflicted with a supposedly incurable disease, cancer of the stomach, "cures" it by means of an absolute fast of 60 days; that a St. Louis physician fasts without inconvenience for 30 days for the reduction of surplus fat; when we recall the Tanner fast of 40 days, and the cable message from Paris, France, sent by Marion Sims to the fasting scientist at New York: "Courage, brave fellow; go on. Your experiment watched here with interest by scientists and ridiculed only by fools;" and when we learn of the poor, bedridden woman, tired of life and longing for relief, taking her case into her own hands and refusing food until relief should come, and that it required 55 days of abstinence to end her suffering,—In view of facts like these, how comes it that physicians seem utterly incapable of learning the true lesson of it all, and continue to hold to forced-feeding in face of nausea, lack of appetite and even of loathing for all thought of food, as is all the time happening from city to crossroads, according to my observation?

It would almost seem as though I had made it very evident that therapeutic fasting is altogether a rational procedure; it is simply "taking the back track," so to say, after bowling along at free and easy pace until nature has called a halt. We number something like 200,000 doctors in this country, and to keep us busy there are doubtless more than that number of recipes for bon bons, sauces, and fancy made dishes, from "deviled gizzards" to "heavenly hash!" Here, for example, is one of the cunning cards of a spice manufacturing firm, appearing over the sliding doors of all the electric cars and calculated to whet the jaded palates of the passengers: "When the meat is tasteless and the soup is flat, then remember that So-and-so's spices and mustards are the original culinary 'hot stuff!'" But, there is no occasion for enlarging upon this point; we all know the tendency everywhere in evidence to over-indulge the appetite and to shirk physical training, so essential to the maintenance of "that just balance which we call health." To imagine that this balance can be restored by means of drugs, or even that much aid can be obtained by such means, has always seemed to me in the highest degree absurd. "When I reflect on the immunity of hard-working people from the effects of wrong and overfeeding," says Dr. Boerhaave, "I cannot help thinking that most of our fashionable diseases might be cured mechanically instead of chemically, by climbing a bitterwood tree, or chopping it down, if you like, rather than swallowing a decoction of its

disgustive leaves."

The late Dr. Austin Flint in an address prepared for the meeting of the British Medical Association in 1886, said: "It is a pleasant thought that, hereafter, the practice of medicine may not be so closely interwoven as hitherto, in the popular mind, with the use of drugs. The time may come when the visits of the physician will not, as a matter of course, involve the co-operation of the pharmacist; when medical prescriptions will be divested of all mystery and have no force in the way of fortifying the confidence of the patient. The medical profession will have reached an ideal position when the physician, guided by his knowledge of diagnosis, the natural history of disease, and existing therapeutic resources, may, with neither self-distrust nor the distrust of others, treat an acute disease by hygienic measures without potent medication. When this time comes a system of practice which assumes to substitute medical dynamics for the *vis medicatrix naturae* will have been added to the list of bygone medical delusions."

Hygienic, or physiologic treatment embraces every natural and helpful measure calculated to assist the diseased organism in its efforts at self cure. Hydrotherapy, with its almost innumerable potent procedures, a few of which have been described herein; massage, which is of immense value in a wide range of diseases, as is well known to all thoughtful practitioners; diet, meaning the ingestion of food when indicated, and its avoidance when contra-indicated; fresh air for the lungs and for air-baths; sun-baths, but guarding against over-exposure to the sun's rays in summer, for even the animals with their hairy coats seek the shade in hot weather; rest, when indicated, and exercise for those who have over-rested, so to say, together with everything in the way of suggestion and good cheer that can be brought to bear upon the mind of the sufferer while still in the enjoyment of his senses. Whenever, as a profession, we shall have reached the height of skill in applying all of these potent remedies for acute and chronic diseases, men like the eminent Professor Semmola, M.D., of the Royal University of Naples, will cease to speak of medicine as "the art which by irony is called the healing one!"

The "Vampire" of the South.—Uncinariasis or hook worm disease of "lazy sickness" is declared by the State Board of Health of Georgia to be afflicting from 150,000 to 200,000 of its citizens. This disease is termed a parasitic legacy of the African slave trade. Effective work by the state authorities is hampered by the unbelief of the people and by the very simplicity of the prophylaxis and cure. The death rate is said to be greater than that from tuberculosis and pneumonia combined. The uncinaria is picked up in its embryo stage by barefooted children; and from the skin of the foot reaches the vital organs through the circulation. The children grow into sickly, bloodless, indolent and stupid adults. The cure can be realized by means of one or two doses of thymol; and prevention of the re-entry of the bookworm is accomplished by the wearing of shoes. The state provides free diagnosis and treatment.

PROBING CONSUMPTION'S PROBLEMS.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

THE advanced wisdom of the tuberculosis specialists of the world, in international conference, has recently beamed upon Philadelphia, preliminary to a more extended threshing over of consumption's elusive problems in larger convention in the Capitol city of the United States. Since Pennsylvania is the foremost Commonwealth in this country working for the repression of consumption, and Dr. Flick, of the Phipps Institute for the study and cure of tuberculosis, located in this city, is the most active spirit engaged in advancing the great work of resisting the spread of tuberculosis, it was fitting that the initial meetings of the convention should be held here.

The battle of contending thought bearing upon repression of the great white plague of human population, is now being strenuously fought again with weapons of aggressive ideas and gleaming words. As yet, proofs of deciding demonstrations of the immediate cause of and escape from dangers are reluctant factors in the momentous problem that aims to spell the arrest of consumption. By the deliberations of the congress it is quite apparent that these souls of great men, in earnest crusade against the spread of tuberculosis, yet grope among the difficulties that they aim to surmount for the welfare of the world. Misled by the alluring trail of the "germ theory" as starter of the degeneration in the system, they hopefully conjure with the unproveable mysteries involved in almost fatuous pursuit of the Koch theory of a special bacillus form of infection as the initial breeder of tuberculosis. A very ingenious doctrine that, once adopted, must needs be bent and strained into so many diversified and illogical shapes to make it conform to the varied squares and triangles incident to the tortuous reaches of its subtle hypothesis. As the unreconciled balks of opinion grew positive as the arguments progressed, it was soon evident that the conference would exchange words of agreeing to disagree, and leave it to the test of time to reveal the deeper truth in its obvious simplicity.

The divergent personnel of the congregated crusaders was altogether distinguished. Bald heads and strong faces of these combatants with the intricacies of a vast human scourge that has so long baffled medical resource and ruthlessly filled myriads of graves unhelped, reminded one of battered survivors of Waterloos of disastrous defeats. No mediocrity of brain dimmed the lines of forces trained to earnest investigative habits of thought. Koch, of Germany, easily claimed distinction as the most talked-of man in the world where rehearsals of bacilli agency as the starter of tuberculosis holds the centre of the floor. Dr. Joseph Neff, director of Department of Public Health in Philadelphia, and Dr. Panwitz, secretary general of the tuberculosis conference just on tap, went to New York to meet and serve as honorary escorts to this city the renowned Koch on his arrival. Reserved at first, he gradually found himself warmed to the fray of discussion by the attitude of other talkers who controverted the published conclusions of Koch as to the transmission of tuberculosis from cattle sources to mankind. Dr. Koch at once rose to the occasion by announcing in German

that was translated to English, that he had later on changed his mind on the question discussed. He thus broke the ice of his reserve among Americans. Dr. Flick came to the relief of the situation by saying that he had never found in Dr. Koch's writings the assertion that transmission of tubercular germs in milk to lodgment in the human was impossible—that Dr. Koch says he never made that statement—but that the transmission of germs from the bovine to the human was extraordinary.

When the wide world rouses from its helpless apathy of past years in regard to repression of the pestilence of tuberculosis we may assure ourselves that something sanitary is already doing. Long journeys were made by earnest men prepared with addresses on some feature of the deepest relief problem that has confronted the world. One delegate is here from Belgium. Two from Denmark. Thirteen from Germany. Ten from England. Ten from France. Three from Italy. One from Greece. Two from The Netherlands. Norway, two. Austria, nine. Roumania, one. Russia, four. Sweden, two. Switzerland, three. Spain, two. Hungary, one. Chili, one. A much larger foreign delegation will be on hand at the international congress to open a few days later in Washington City. The tubercular exhibits are already open there to inspection and study. Many have been brought from abroad; but the Pennsylvania exhibit of tuberculous specimen from the human and from animals supersede all others in variety and interest.

The mayor of this city spoke some encouraging words of welcome to the visitors. He commended the high and sacred mission of this meeting of delegates together to reason and mature modes to cast out the scourge that has come upon the human race. Governor Stuart happily enlarged in his address of welcome, prefaced by a warm tribute to Dr. Flick, to whom he said we all feel a debt of gratitude, and who was the pioneer in the consumption fight in Philadelphia, and by his indefatigable exertions made this city the foremost in this respect. Continuing, the Governor said that the Pennsylvania Legislature early recognized the importance of protecting the lives of its citizens from consumption. In 1893 came the first state appropriation for tuberculosis work. To the present time, Rush Hospital for treatment of Consumption has received \$197,000. Free Hospital for Consumptives, White Haven, 305,000. To miscellaneous institutions through the commonwealth, \$27,000. To State Forestry Department, \$23,000. Total, \$562,000. When the people of Pennsylvania were confronted with the fact that in the year 1906 there were 10,623 deaths from tuberculosis in this state, they demanded that provision be made by the state for protection of public health from this evil. In addition to the appropriations already stated, in 1907 Pennsylvania appropriated the sum of \$1,000,000 to be used by the State Department of Health for the purpose of conducting a vigorous campaign against tuberculosis and the relief of unfortunate victims of this disease. Six hundred thousand dollars is to be spent in building sanatoria wherein incipient tuberculosis cases can be taken care of and the hope of renewed health and continued life given, and where, also, thousands of the advanced stages of the dis-

ease may receive proper attention and be made as comfortable as possible. On the summit of a mountain near Mont Alto, Franklin County, 1,800 feet above the sea, protected by forests of stately pines, we are actively engaged in erecting a modern tuberculosis village that will accommodate 500 patients and can be extended to provide for 4,000. Its cottages for incipient cases have every detail worked out to get for the patient the greatest possible amount of sunshine and fresh air. But many poor who are victims of incipient tuberculosis, men and women wage-earners, are compelled to devote themselves to supporting their families. The Department of Health is solving this problem by establishing in every county in the state tuberculosis dispensaries where persons in early stages of consumption are coming for personal treatment. More than 4,000 have already registered. The Governor told the delegates that they are engaged in a noble work—a stupendous battle—and in the last analysis, great human achievements rest on perfect physical health."

Proceeding with the working machinery of the conference, Dr. Williams, of London, pointed out the values of high altitude for consumptives, and after reviewing the history of the disease, affirmed that it was not until a tonic system of treatment was adopted, embracing cod liver oil, a good dietary and a stimulating climate, that the duration of life in consumption increased from two years to eight years. He also advocated moderate exercise outdoors at light work or walking in early cases preparatory to leaving sanatoria to resume ordinary labor. For more advanced cases he recommended the passive exercise of riding or sailing for general invigoration of the patient, to increase of weight, reduction of symptoms, especially to increase of lung surface. In his experience with serum treatment, he found it unfavorable in advanced cases. He reminded his audience that the history of consumption shows that more could be accomplished by measures that reinvigorate the resisting powers of the patient than by those measures which aimed at the destruction of the pathogenic germ. In discussing remedies, Dr. Williams believes that codliver oil had done more than all the others. Creosote he found reduced catarrh, but exercised no control over the evolution or the spread of tubercles. This is a point blank revolt from the germists' theory of arresting germ production by anti-germ drugs. These are of no account to the system when compared with the renovating value of clean fresh air to oxidize the blood corpuscles in the natural way.

Dr. von Schroetter, official delegate from Austria, contributed a paper treating of infection of the pneumo-thorax. He drew attention to the handicap of smoke (but overlooked the poisonous fuel gases also) that spoils the atmosphere in large industrial cities like Philadelphia. He supposed he would find Washington the ideal American city for the avoidance of tuberculosis, as its lack of industrialism must make it nearly smokeless, and its federal inspection of food and of living conditions should place it in front rank of health. In using the term "official delegate," it should be explained that the Philadelphia conference differs from the Washington congress in that it is composed of officially named representatives

from national associations for the prevention of tuberculosis. There are representatives of forty-six countries in the congress—while the conference contains representatives from the United States and 16 other countries. It is the ignis fatuus, the Jack o' lantern chase after the imputed agency of the bacillus found in tuberculosis, although not the cause of tuberculosis, in any material sense, that leads even the strenuous scientists into their "forty years" wanderings through the wilderness of suggestive conjectures and deductions while the Canaan of simple and logical causes of consumption prevail everywhere alongside the beaten paths of impure breathing-air indoors and outdoors from everyday cause. The lack of normal aeration or oxygenation of impure blood, day and night, must and does result in accumulated debris tending to degeneration in the human body, usually first in the breathing organs or lungs, but may be the source of infection developed in any other location in the body. And the process of this degeneration is by deposit of non-eliminated carbonaceous waste material in the form of tubercles, in which develop the softening agents termed bacilli or ferment cells provided by nature to eliminate or remove the devitalized material that results from deficient aeration of the blood cells in their continuous rush to the lung cells for relief from accumulated impurities. Inhaling impure or poisoned air can never purify the blood cells nor release them from burdens of degenerated or dead matter, which, stored in the system, must and does impair or destroy the resistive powers that prevent tuberculosis and nearly every other common form of disease. What are the common poisoners of the breathing-air of population? Think it out and grow wise. One fact I can guarantee, it is not dried and devitalized bacilli supposedly floating in the air. Our laboring scientists begin to recognize the fallacy of that unscientific bluff. By the trend of certain men's convictions it became evident that revolt is rising against the over-talked menace from inhaling dried germs of tuberculosis in floating dust. This scarecrow is a vaporous ghost of imagination, in itself unprovable, to mask fables of germ prowess. Once a streak of oxidizing sunlight touches a bacilla, any virulence of that bacilla is obliterated whether in spittle in open air upon the street, or elsewhere. In spite of battling arguments on lines of germ defense, any discriminating mind could comprehend that the out-and-out germists as cause of consumption were being surrounded by flank testimony that appeals to broader reasoning.

Dr. Phillip, of Scotland, the pioneer in treatment of tuberculosis through dispensaries for the general public on large scale, bent his attention to the practical work of dispensary service. Before the Royal Victoria dispensary, named after the late queen, was opened, Dr. Phillip conceived the idea that this was the best method of treatment for reaching the public, and for detecting cases in incipient stages who might be permanently rescued by resort to sanatoria. He said it is the work of prevention aimed to do most good. The institution has been supported entirely by public subscription; but the government is now granting aid. Strangely enough, he says, London, the metropolis, is just opening her first dispensary. This shows how far London is behind our moderate-

sized country towns. For instance, in Columbia County, Pa., where I lived in earlier life, there has been for considerable time a successful dispensary for consumptives located in Bloomsburg, one also in Berwick, and another is about to be installed in the town of Benton.

Nor did Dr. Unterberger, honorary physician to the czar of Russia, surgeon general of the guards, waste time in babbling about "germs." He did say something about his country waking up to the importance of relieving and resisting consumption. As the personal delegate of the czar and of the Russian War Department to the conference in Philadelphia and to the congress in Washington, he evidently was here to gather ideas. A sanitarium has been established at Helila which is supported by the czar and the czarina, both of whom feel much interest. To the disturbed condition of the country he attributes the absence of any organized effort to resist tuberculosis. The low condition and ignorance of the poor in Russia he believes severely curtail their resistive power against the spread of consumption. He would have spoken more wisely if he had put it—against the development of consumption. The eminent John Mitchell, late president of Mine Workers of America, at the International Congress on Tuberculosis in Washington, wove no wicker around microbes, but sounded clear notes of reason in these words: "Much of the responsibility for the spread of consumption must be placed upon four elements of modern society—employers who fail to provide sanitary workshops for their employees, landlords who erect unsanitary dwellings, working people who are indifferent and ignorant in matters of hygiene, and finally, governments that fail to enact or enforce adequate laws for the protection of health." Continuing: To the men of learning and science from all parts of the globe the working people of America turn with expectancy for assistance and direction in our struggle against this plague, which, unaided, we cannot successfully combat. We are concerned in regard to sanitary measures which will prevent infection. Especially important are the housing conditions in our large cities and wider knowledge of the importance of sanitary management in the homes of the people." Also Delegate Gompers, president of the American Federation of Labor, skipped the microbe parley, but talked straight to the mark of defense against consumption: "Legislation in the vital matter of premature child labor, legislation for trade agreements regulating working and living conditions in accordance with modern scientific findings." This expression should have read—"scientific findings of the immortal sanitary values of pure air every breath of human life." He agreed with Dr. Flick that overwork and worry are causes of the high death rate among workers, and with the arguments for hospitals and sanatoria for incipient and advanced cases. He argued, furthermore, that shorter working hours would lower the death rate from consumption, and produced statistics showing that in the cigar-making trade since 1886, when the eight-hour law was established in union shops, the death rate from consumption among workers has been reduced more than 50 per cent. I submit that there is more clean practical sense evolved in ten minutes' talk on ground-floor facts like these than can be won by working

people out of a leather-bound edition on the the unlimited mysteries of microbe manners. It is yet possible for clear-headed thinkers to manifest good sense while professional muddlers grow daft with their own delusions. Particularly in regard to the bacillus theory of tuberculosis, when one theory fails to materialize in broadcast results, another is sought for or is devised until the self-contradicting confusion becomes a romance of guessing. In this conference the cow is attacked, the beef steak, though cooked, is flayed, the milk is made the murderer by transmission from the animal to the human. Another extremist fishes for the deadly bacillus in the water, whether boiled in cooking or incidentally drank raw. Some one spits upon the street or the earth. If it dries, the "bacillus" floats with the dust, or is washed by rain to a sewer or a rill, at length it reaches a well or water supply for a city and is swallowed by the people. From the digestion of the stomach it finds way to lodgment somewhere in the body, and there starts a tuberculosis! Wonderful fancy! Tortuous trip! What has hygiene to account for in the emergency? What is the cause of consumption? A delegate of prominence, statistician for a great insurance company, startled the conference by statistics showing that 70 per cent. of workmen in the grinding and polishing trades die from consumption at the average age of 35 years. He also demonstrated the high mortality among clothmakers and textile workers generally, stone-cutters and others engaged in dusty trades. He appealed that workingmen (he should have included workingwomen, teachers, store girls) be guarded against unsanitary shop and housing conditions.

A suggestive response to this implied appeal could be gleaned from speakers who urged the need of educating the public as to the practical means by which tuberculosis may be avoided. For this interval the bacillus was not sticking to the centre view field of the eyeglasses of the gentlemen who talked. To elaborate extent Dr. Flick contended that prophylaxis is the most important item in the crusade against tuberculosis. That it strikes at the root of the evil. It seeks to make this earth more safe and more enjoyable to the human family. For prophylaxis, pure and simple, he said we must have a higher standard of education along new lines of thought. Tubercle-bearing matter, if kept moist, decomposes very readily and contained bacilli therein become attenuated. In the open, where the rains can get at broken-down tissue, tubercle bearing matter soon loses its power for evil. Sunlight sterilizes bacilli bearing matter very soon, and if not completely sterilized it attenuates it sufficiently to make it harmless. Every house which is inhabited by a consumptive should be registered, and when vacated by the case, should be disinfected by the Board of Health. Excessive exercise should be avoided. Implantation of bacilli through contaminated drinking water is a theoretical possibility, but it is of no practical importance. The bacillus cannot maintain its vitality—he should have said any infectious influence, for the ferment of bacilli is not a vitalized entity) does not maintain its vitality in sewage long enough to give implantation through drinking water. If expectorated matter be received in paper napkins

and burned no danger can follow. Spitting on the pavement is not only unbecoming, but may contaminate the trailing clothing of women, while spitting in the street may be safe. Improvement in the food supply and in the mode of its preparation, and improvement in the housing at home and the workshop and ventilation of stores and other places where the working classes are employed, would greatly reduce the liability to tuberculosis by improving the individual resistance to the disease. So we perceive that at heart our germ radicals see abundance of hope in the sidelight. In no similar assembly of reasoners have I heard so little suggestion of the old fable about hereditary consumption.

Dr. Koch, of Berlin, presented his isolation theory. He said the history of the isolation of the victims of contagious diseases is contradictory. Reasoning from the basis of leprosy in Norway, he had found that only one-fourth of the whole number of cases were isolated, yet that fraction of the whole was sufficient to stamp out the disease. He had reasoned from this that tuberculosis could be eradicated with only partial quarantine. But when he went to another country he had found that although every case was isolated as soon as discovered, the growth of leprosy has not been checked. "I reason," he said, "that from this condition tuberculosis cannot be brought under control by isolation of its victims in sanatoria or other institutions." At this turning point I interject the fact that since the everyday environment of population induces tuberculosis in the way that I have already described independent of preliminary germ invasion, consumption will never be arrested en masse by the isolation of those who already have the disease. Switching a portion of the stream to a milldam never staunches the onflowing source. Dr. Koch, however, reasoned that to bring tuberculosis under control, there must be education of the individual and self-isolation in the home if we are to achieve success. Who ever heard of such a childish proposition?—blind science stultified! Koch added that his conclusion was based on the circumstance that the quarantine against cases of the plague of cholera in Russia had enabled Germany to escape the ravages of that direful disease. We should ask whether or not there is any similarity between the death-gushing cholera and the gradual canker of consumption on which to base his theory of home isolation of from one to several years? I submit that if there exist active contagion in tuberculosis, then the strict quarantine of cases by home isolation rings for that home the death knell for all of its members! It is obvious that Dr. Koch is swamped in the phosphorescent deductions in which he is gifted, and will never get out from his puzzles till he abandons them for more level barks that can make port in relatively clear waters. Later on he presses his theory, but meets repulse.

Dr. Biggs, bacteriologist of New York, told the conference that in order to combat tuberculosis as a disease of the masses it was of highest importance to look after advanced cases, as they are the greatest sources of infection. He argued that advanced cases should not be rendered uncomfortable by being forced to live and sleep out of doors at all seasons of the year, and compelled, to no purpose, to take

large quantity of food which is distasteful or nauseating. He said that in the past many sanatoria have unduly restricted admission to incipient cases; but when advanced cases are found among homeless individuals, or living in lodging houses or among dwellers in tenement houses under conditions which make it infectious to others, the health authorities should have the power to remove such individuals, even forcibly, and retain them in special hospitals for care. At the present time in the United States probably there are less than 10,000 beds available for advanced cases, and of these 2,300 are in New York city. These figures but show how entirely inadequate is the accommodation for this class of cases. The care of advanced cases of tuberculosis is probably the most important single factor in the suppression of the disease. Dr. Biggs also argued that far advanced cases may be safely treated at home, provided the sanitary conditions there are proper and that others are not endangered. And that the health authorities have power to forcibly remove and detain such consumptives as for reasons are serious menace to others. Dr. Farrand insisted that the approach to the questions of control of tuberculosis should be made by two avenues; education of the general public and enactment of efficient legislation. To accomplish these ends, organization is necessary. Having achieved organization, then hearty co-operation should be fostered between members of the medical profession and the zealous laity in promoting agitation for sufficient laws, and for sanatoria, dispensaries, education of the public by leaflets, public exhibits and lectures, also by the importance of newspaper publicity.

Dr. Samuel G. Dixon, commissioner of health for Pennsylvania, made a forcible address on Legal Rights. Like a patriot bent on dispersing the foe, he pushed ahead of the lines he leads in the fight on consumption. I can here revert to but a few of the positions in the line of his advance. He said that in the exercise of the police power, the state may quarantine persons suffering from or exposed to infectious diseases, compel the abatement of all nuisances detrimental to the public health, or abate them itself, even going so far as to destroy property without compensation to the owner when necessary. Whenever the legislative intent to impose a health regulation is clearly expressed, the power to impose the same is undoubted. Health regulations should be enforced, if necessary, by summary proceedings before a magistrate—any magistrate in the county. That legal regulations should be as little vexatious as possible, they should be preceded by a campaign of education, so that the community may be led to see the necessity therefor and thus willingly acquiesce in their enforcement. The universal method of preventing the spread of infectious and contagious diseases in civilized countries is to isolate or quarantine the source of infection. There seems to be no abstract reason why the same practice should not be followed in the case of tuberculosis. But popular sentiment has not been sufficiently educated yet to approve of the general enforcement of this measure. Dr. Dixon continued: What other measures then should be resorted to to prevent the spread of the disease? The legal rights

of the people under our republican form of government may be comprised in the single word—protection—protection to life, to health, to property. Unfortunately in the United States there are a hundred laws for protection of property to one for the protection of life and health. As to tuberculosis, it is the legal right of the people to require medical attendants of all persons suffering from the disease to report to the health authorities who represent the people for this purpose, the names and addresses of all such patients as soon as the diagnosis shall have been established. It is the right of persons desiring to change their residence to receive from the landlord or owner of the dwelling which they wish to rent or purchase a clean bill of health from a health officer. In like manner, the traveling public has a right to be assured that rooms in hotels or boarding houses have either not been exposed to the tubercular infection or have been thoroughly disinfected since such exposure; and that all dishes and eating utensils that have been used by those known to be tuberculous have been sterilized. The right of those who make use of public laundries to have the assurance that all clothing and bed clothing used by tuberculous patients and sent to be washed should first be sterilized so that infection may not be conveyed to the clothing of others. The right of persons visiting public buildings to feel secure against infection by the precaution of using liquid disinfectants in public cuspidors. Similarly, the right of all employees of either sex in mills, factories or workshops of whatever kind, to be protected by a like provision. The right of those who travel by night to be provided with clean bedding—that all transportation companies be compelled to have all washable bedding disinfected and washed after each occasion of use. That all bedding and blankets in hotels and transient boarding houses be similarly treated. That all transportation companies forbid employees from brushing the clothing of passenger except in special portion of car provided for the purpose away from the presence of other passengers. The right of ordinances forbidding spitting on sidewalks, and on floors of all cars for transportation of the public. The right to demand pure food, free from all infection, and to compel discharge of all tuberculous employees who handle food products. The people have a right to pure, uncontaminated milk, especially in view of the fact that young children so often develop tuberculosis. Hence milk vendors should be forbidden to purvey milk from tuberculous cows. Such animals not to be permitted to live—but their owners be reasonably reimbursed by government for the enforced loss of such cows. That all foods exposed for sale be screened from flies and other disease-carrying insects. The right to have the sale of foodstuffs constantly supervised by public officials, as wholesome nourishing food is essential to enable the consumers to resist the invasion of the tubercle bacillus. Also the right to demand pure water as a prophylactic. No tuberculosis matter should be permitted to enter streams in sewage from hospitals, almshouses, laboratories or dwellings without thorough disinfection. That it should be a matter of legal enforcement that sufferers from tuberculosis should discharge sputum nowhere except

in their sputum cups or paper napkins, and also provide themselves with individual drinking cups in order to avoid those used by others. Persons committed to any public institution, including prisons, have a right to be protected from the dangers of association with inmates who are tuberculous. It is the right of parents to feel secure from the communication of tuberculosis to their children when attending school. Hence tuberculous children should be excluded from public schools; and no tuberculous person should be engaged as a teacher or allowed to continue in that capacity. People have a right to demand that clothing offered for sale shall be free from all contagion; and law must provide that all garments upon which tuberculous persons have worked shall be disinfected before offered for sale to the public. Furthermore, public utilities, such as telephones, drinking cups, pencils and penholders should be cleaned and disinfected daily. Avoid the tubercle bacillus itself—build up the resisting powers of the individual. In thus condensing Dr. Dixon's ultra germ idea of avoiding the spread of consumption I have covered his matter in brief without the formality of quotation marks.

Prof. Calmette, director of the Pasteur Institute at Lille, France, in drawing attention to the importance of early diagnosis of tuberculosis, explained that the presence of Koch's bacillus cannot by itself be regarded as an early sign of tuberculosis. But a drop of tuberculin through a simple erosion of the skin of a child suffering from scrofula or other form of tuberculosis would produce a reaction. It is also a reliable sign in adults, but interpretation more difficult. He says the test reveals without fail in less than 48 hours the existence or non-existence of a suspected tuberculosis lesion. The reaction shows that, outside of hospitals, from 10 per cent. to 15 per cent. of all individuals supposed to be perfectly healthy, really have within them tuberculosis lesions. He also said that the injection of a drop of tuberculin in the eye is quite free from danger. The subcutaneous and the ocular methods of diagnosis could be used as check upon each other. If both were positive there could be no doubt of the tuberculous existence. This evidence all precedes the development of Koch's bacilli which is found later in the progress of the disease. And I have the audacity to claim that this recent means of diagnosis directly strengthens my own position that bacilli are not the starters of tuberculosis, but are developed as ferment scavenger agents by the decay of the inorganic deposits of deoxidized waste matter recognized as tubercle.

Dr. Jacobi, of New York, made an invincible stand against Dr. Koch's revised idea as to checking consumption by isolation at home. In condensed logic Dr. Jacobi said: "I have great respect for my superiors and I prefer to agree with them except when they are mistaken. I believe that Dr. Koch is mistaken as to the isolation of the tuberculous poor in their homes. Such isolation in large cities is simply impossible. In Berlin, as far as I know, there are 40,000 families who have not, on the average, more than one or one and a half rooms each. More than 200,000 families in New York city have not more than one room with two windows and one dark room

each. When we consider that the average family consists of four or five members, how is the isolation of a tuberculous member of it in the home to be regarded as possible? The attempt simply means perdition to the whole family. What we have to do is to take these patients away from the home. In no other way can the family be protected from home infection." Great applause followed Dr. Jacobi's remarks. This ends my recital of the Philadelphia anti-tuberculosis conference.

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AN INGESTION TRIAD.

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IN my paper on the Commoner Coccus Infections in the October number of *The Times*, I observed that in all bacterial diseases two factors are most essential to be considered: the predisposition, and the germ which is in each given disease the essential cause. I noted also that the same germ may produce diseases having quite diverse clinical manifestations; that on the other hand a disease clinically well defined may be produced by different germs. These considerations hold good also regarding bacillary infections, three among which I shall consider in this paper; except that in the latter the role played by the essential germ is much more distinctive. Only the typhoid bacillus is the specific factor in that disease; the comma bacillus is likewise well defined as the essential cause of cholera. Having stated these premises I may now consider typhoid fever, epidemic dysentery and Asiatic cholera; these are ideal types of ingestion disease, in which the highway is by the mouth. In all of them the digestive tract is primarily invaded. The bacillus typhosus is the germ responsible for typhoid fever. Infection is by means of food, but especially water or milk; other foodstuffs may convey it—meats, bread, cake, vegetables upon which bacillus carrying flies have alighted, "fattened" oysters, possibly clams, lobsters and crabs. The role which flies play as an intermediary in typhoid fever has recently received much study; and it is well worthy the reflection of my colleagues, who have no doubt examined the editorial in the October number of this journal on *The Autumnal Disease*, in which due stress has been laid upon this factor. I can add nothing here to the Editor's presentment. We are all now familiar with that phenomena, the "typhoid carrier." The matter is indeed one which must loom large in our everyday experience. The well-known and characteristic focal reaction to the invasion of the bacillus is in the follicles and in "Peyer's patches," which become swollen, break down and ulcerate. With recovery these ulcerations heal and cicatrization results; one of the most serious calamities in medicine is to have any of these ulcerations perforate into the peritoneal cavity, with the almost uniformly fatal result from shock or hemorrhage or peritonitis, or the combination of these factors. Undoubtedly

the grave symptoms of typhoid are due to the absorption of the toxins generated by the bacilli. Anorexia, lassitude, headache, general malaise characterize the incubation period (14 days, minimal 2 days, maximum duration of incubation 21 days). Fever characterizes the invasion—higher in the evening, ascending slowly through the first week day by day; headache, progressive prostration, constipation, coated tongue, which in time becomes dry and fissured; the petechial which develop upon the abdomen and thorax, the enlarged spleen, the "peasoup" diarrhoea, the rapid and slowly weakening pulse, the coma and delirium as the disease progresses. We are all familiar with the typhoid state.

The Gruber-Widal reaction is used in the diagnosis of typhoid fever; this is the agglutination test as applied to this disease. Ricketts states the basic principle: In the acquiring of immunity to a microbic infection the serum of an individual gains in agglutinating power. Consequently if one has at hand the specific germ for a given disease, he would expect the serum of a patient suffering from it to have a stronger agglutinating power for this germ than for others which are accidentally present; and this power would also be greater than that possessed by the serum of one who had not had this particular disease. The agglutination test has, despite some possibilities of error, been distinctly valuable in the recognition of the germs of some infections.

The Gruber-Widal serum test generally yields a reaction indicative of typhoid fever; but not until after the seventh day from the manifestation of the disease. It is not an absolutely certain test because it yields also a positive reaction in some cases of other disease than typhoid. A few drops of blood are obtained by puncture of the finger with careful aseptic precautions. The serum that separates is put into a narrow test-tube containing sterile bouillon (the dilution being 1-40 to 1-50), which is then inoculated with living typhoid bacilli and kept at the temperature of the body. In the course of a few hours agglutination and sedimentation, with loss of mobility of the bacilli, should take place, if the case be one of typhoid fever.

The agglutinating power of the serum in typhoid varies day by day; it may be thirty times as strong one day as the next; it may even disappear for a day or two. The first test may thus be negative; and several daily tests should then be made in suspicious cases. These puzzling variations in agglutination may be due to mixed infection, intestinal hemorrhage or a sudden influx of typhoid bacilli into the circulation. Typhoid may run its course without the formation of agglutinin; high agglutinating power for the typhoid bacillus may develop in such other infections as pneumonia, meningitis and icterus; the possibility of group agglutination may require control tests with related organisms for positive elimination. The Diazo reaction is found in somewhat more than half the cases of typhoid fever; its usefulness is further depreciated by the fact that it occurs also in tuberculosis, malaria and in acute diseases with high temperatures. Cases of paratyphoid fever, which resemble typhoid clinically, but do not give the Gruber-Widal reaction, have for their es-

sential cause the paratyphoid, or paracolony bacillus. Clinically these cases appear to be like mild typhoid; there is enlargement of the spleen; rose spots have been manifest; there have even been intestinal hemorrhages. There have been cases either isolated or in small epidemics. In fine autopsy reports the spleen was enlarged in all; the intestinal lesions were quite variable—extensive ulcerations in three of the cases, and all having the appearance of ulcers in dysentery rather than in typhoid fever; in all the cases moreover the Peyer's patches, the solitary follicles and the mesenteric glands were unaltered.

The prophylaxis of typhoid fever is technically, at least, quite simple. It is not an air-borne disease; but is contracted only through ingestion. I shall not here restate the familiar procedures.

Infectious dysentery is characterized by ulceration of the large intestine following membranous destruction. The incubation period is from one to five days. After several days of diarrhoea there will be painful griping and bearing down with irregular fever and a sense of chilliness and prostration. Collapses may take place during the attack, which may continue for five days. The stools will contain mucus, pus and blood. Among complications of this grave disease, nephritis, pneumonia and perforative peritonitis have to be feared. This is the general character of the disease. At least four types of infectious dysentery have been differentiated: The acute catarrhal, either sporadic or epidemic, common in temperate climates; the exciting cause is not certain—known. On autopsy there is found general congestion and swelling of the colon, with a covering of bloody mucus; the solitary follicles are hyperplastic, prominent; becoming necrotic, they slough, leaving circular ulcers. Diarrhoea makes the invasion, with severe and general abdominal cramp, frequent bloody and mucous stools with tenesmus; after a day or two these stools are made up almost entirely of blood and mucus. Temperature reaches 102 or 103 degrees; the thirst is great; articular pain and swelling may appear. After a week the stools become normal. In the diagnosis we must exclude rectal cancer and syphilis. The disease may be fatal or end in recovery within a month, or become chronic. Long rectal irrigations with normal salt solution or with a weak solution of silver nitrate, bed, fluid diet, initial castor oil or Epsom salts, followed by bismuth subnitrate in large (one-half drachm) doses, or a capsule of castor oil (m. v.) with salol (gr. v.) every 2-3 hours—such is the treatment. My own preference is very much for an initial large dose of castor oil, the most emollient of purgatives; with high rectal injections subsequently. Acute epidemic or specific dysentery is chiefly a disease of tropical countries; the exciting cause is the bacillus dysenteriae of Shiga. In our country there is an allied form, the "acid type" of Flexner, which is found in cases of infantile summer diarrhoea. The symptoms are very like those just set forth; the diagnosis is made by the microscope and by the agglutination of cultures of the bacillus with the serum of sufferers from the disease after the third or fifth day. I shall presently lay stress upon this form. Amoebic or tropical dysentery is frequent in the United States and is very common in the tropics; it

is endemic, epidemic and sporadic. The "amoeba coli" of dysentery is found in the stools and in abscesses of the liver and lungs. Acute cases come on suddenly with frequent, bloody, mucous stools, pain, tenesmus and slight fever. Recovery is the rule, but the disease may become chronic. There is rapid loss of flesh and strength; death may occur within a week. Chronic cases are generally either acute or subacute to begin with; there are alternating periods of passages of blood and mucous, alternating with improvement. Emaciation becomes marked; death is by asthenia. Complications are hepatic or pulmonary abscess, intestinal perforation followed perhaps local or general peritonitis. The diagnosis is made by the tendency to recurrence and by living amoebae appearing in fresh stools. We irrigate the large intestine in such cases with warm solutions of bichloride 1-10,000; quinine 1-5,000; or nitrate of silver (20 to 30 grains to the pint, using from three to six pints). An artificial anus may have to be made, to be closed after recovery. In diphtheritic dysentery the infection may be primary or secondary. The congested mucosa is covered with a false membrane, or the wall is infiltrated and necrotic; in severe cases sloughs separate, leaving ulcers, which cicatrize or remain granulating indefinitely. Primary cases have often typhoid-like symptoms; they may terminate in death or become chronic; secondary cases are generally referable to the preceding disease (pneumonia, endocarditis, renal abscess). We diagnose from typhoid by the absence of the Widal reaction, of the enlarged spleen and of the rose spots; the temperature is not so high as in typhoid; the stools are characteristic. The disease is often fatal; the treatment is as in the other forms of dysentery. Acute epidemic or specific dysentery is due to the action of a specific bacillus, of which there are at least two types. In 1898 Shiga identified the bacillus dysenteriae in Japan by means of the agglutination test and by its presence in the stools of the sufferers (Ricketts). In 1900 Flexner in Manila isolated the bacillus dysenteriae of Flexner, an organism slightly differing from that of Shiga. In this country similar organisms have been found to cause institutional dysentery, and the summer diarrhoeas of infants. The bacillus dysenteriae is the most important cause of acute dysentery; the stools of healthy individuals rarely contain it. Of the organisms of Shiga and Flexner the latter type is the stranger acid-former; it is in this country much commoner than that of Shiga. There is some difference in the agglutinability of the two. Several other organisms have been cultivated from dysenteric patients; but all are closely related and all vary but slightly from those of Shiga and Flexner. The organism is somewhat thicker than the typhoid bacillus; it is probably non motile. Kruse believes that it may live over winter and cause fresh outbreaks in the spring; no doubt this is so if one may judge by analogy with other germs, such as that of Asiatic cholera. The dysentery bacillus has been found only in the stools of the infected, in the mucous or muco-hemorrhagic portions of which it is found in almost pure culture; it has not been found in the blood or urine. Upon autopsy it has been found only in the intestinal ulcers, the swollen lymphoid structures, and in the

mesenteric lymph glands. The intestinal lesions may differ from simple hyperemia to extensive diphtheritic inflammation with necrosis, rarely extending however below the submucosa; these lesions seem most marked in the sigmoid and descending colon where mechanical injury would be greatest; there is generally an ileocolitis; there is commonly parenchymatous inflammation in the liver and kidneys. The bacillus is highly toxic; subcutaneous injections of killed cultures produce profounder reactions in man than do either cholera or typhoid. The patients' stools are the only known source of the organism; it continues to be excreted during convalescence. Possibly there are also dysentery carriers, as in typhoid. Latent or chronic cases are a source of danger to the community. The mode of infection is quite identical with that in typhoid and cholera. Water infection is certain; indirect transmission is by contact with the discharges. There is much contact infection in institutional epidemics. The first essential to prophylaxis is correct diagnosis to which the agglutination test and bacteriological examination are essential. We disinfect and take other precautions as rigidly as in typhoid; the patient should remain under observation until the discharges are free of the germ. Predisposition to infection, especially digestive disturbances and enteritis from other causes, raises the death rate from dysentery enormously. The disease is most common among little children, old people and those confined in institutions. The normal human serums have little bactericidal power for dysentery bacillus. It is very pertinent to note regarding the diarrhoeas of children, that they are almost never suffered by breast-fed infants, but most commonly by those whose food is prepared artificially. There is here, no doubt, much opportunity for bacterial infection.

Cholera is endemic in India; the fatalistic Mahomedans make it a part of their faith to bathe in the polluted Gauges. The devout also make pilgrimages to Mecca; they have to this end been proceeding overland by caravan or by way of the Red Sea. With the completion of the Hedjaz Railway the time of the pilgrimage from Damascus to Mecca has been much shortened; and the difficulty of detecting cases of the disease by the agents of European governments anxious to protect their respective peoples has been greatly increased. Thus have Asiatic Mahomedans from time immemorial been carrying the cholera vibrio to Mecca, and not content with this have increased the likelihood of transmitting the infection by bathing in the holy well at Mecca. The western coreligionists of these pilgrims have in their turn, traveling eastward, visited Mecca upon the like pious errand; and they have duly taken with them the vibrio when returning to their homes in Egypt, in other parts of Africa in the regions about Palestine and the Black and Caspian seas. Thus have Mediterranean countries constantly to fear invasions of the cholera. Russia is never free of the danger of epidemic; and the columns of our lay press are not yet done describing its ravages in that unhappy country. To us physicians who are trained in scientific thought, who know the simple prophylaxis by which cholera can be extinguished, there can seem

no greater anachronism than cholera; it is indeed one of the few remaining links which still connect our twentieth century with the blind, ignorant, superstitious middle ages. We have little occasion to fear the disease in America, for our coast sanitary authorities are able and trustworthy; besides the incubation (twelve hours to five days) permits cases to develop before they can reach our shores.

Cholera has for its essential cause the common bacillus, or the vibrio cholerae (a vibrio is a bacillus slightly sinuous and having a filament at an end); Koch discovered this bacterium in 1883, shortly after his great demonstration of the tubercle bacillus. The organism may invariably be cultivated in the stools of cholera patients. It is never found in any other diseases nor in normal stools, except in the case of non-susceptible persons who may be encountered during an epidemic; such people may be "cholera carriers." Agglutination tests are made with anticholera serum. There is also the "Pfeiffer experiment" in which the protective power of an anticholera serum is determined when guinea pigs are infected intraperitoneally with the suspected culture. If the serum shows a protective power against this organism which approximates that shown against a known cholera vibrio, or, if the organisms are dissolved, the diagnosis of cholera is justified (Ricketts). The resistance of the cholera vibrio is low; it dies in about two hours when dried; boiling kills it instantly. One per cent. carbolic acid kills it in five minutes; mercury bichloride (1-2,000,000) in from five to ten minutes. Calcium chloride is an efficient disinfectant when thoroughly mixed with the stools. Infection develops in the small intestines following ingestion of the organisms; there is no infection via the lungs or through wounds. The vibrio seems to have no normal habitat outside the body, though water supplies may contain it over a long period through constant reinfection, which can only occur, directly or indirectly, through the stools of patients. Washing soiled linen or bathing in water used afterward for drinking purposes have caused cholera outbreaks; urban water supplies may be infected by the discharges of patients confined to a ship. Convalescents may retain in their stools virulent vibrios for forty-eight days. There are two types of epidemics which are, however, often associated; those caused by water infection, and when the disease spreads by contact, direct or indirect. The distribution of a "water-borne" epidemic in cities corresponds with the distribution of the infected water. In Hamburg, for example, in 1892 there were certain streets in which the residents of the two sides obtained their water supply from different sources. One of these sides was cholera infected, having been supplied with infected water; the other side escaped to a remarkable degree, only irregular cases due to contact infection having occurred in it. Epidemics due solely to contact infection develop slowly and irregularly, here members of one family will successively become involved, whereas other people in the immediate neighborhood are unaffected. The "Water-borne" epidemic is always accompanied by contact infection; food and milk which has been infected by contamination water or to which flies and other insects have transferred

the vibrio, may be the means of infecting isolated groups or cases. The essential points of the prophylaxis, as founded by Koch, are: 1. Immediate bacteriological examination of the stools in suspicious cases. 2. Absolute isolation of patients in a hospital whenever possible. 3. Through disinfection of the stools, linen, room and all articles with which the patient has been in contact, including water closets and privies. 4. Continued isolation during convalescence until the stools are free from vibrios. 5. Repeated bacteriological examination of the stools of those who have been in contact with cholera patients until their freedom from vibrios is assured. 6. Frequent examination of the water supply at different points in order to detect the occurrence of water infection. 7. In case water infection exists, exclusion of the water from all domestic uses, and the adoption of means to rid the water of infection. Water for household use should be boiled. During the epidemic of 1892-4 there were, under Koch's regime, about 10,000 cases of cholera in Germany, and of these 9,000 were in Hamburg; on the other hand there were in Russia, where scientific precautions were lacking, 800,000 cases during the same period.

The Modern Conception of Gonorrhoea and Syphilis, Three Centuries Ago.—We are accustomed to believe that the science of medicine is of recent origin and that even the art of practice and the conception of prophylaxis are quite modern so far as any practical achievements are concerned. Within the last few years, nearly every gynaecologist in the country has waxed eloquent over the infection of innocent women by their husbands and there are doubtless many of the younger members of the profession who have thought that the first article of this kind that they happened to read, betokened originality.

Before us lies an old vellum covered edition of the medical writings of Guillaume Ballon of Paris who died in 1816, aged 78. It was published 19 years after his death, in Latin, and consists of brief, practical clinical descriptions of various medical cases. Those of us who have imagined that all wisdom in medicine was of our own times, owe an apology to this predecessor of ours who flourished before the beginning of the colonization of the territory that has become the United States.

"Virulent Gonorrhoea."

"A noble woman entered by her husband who had slept with an impure prostitute, is infected; hence an extremely virulent gonorrhoea, imitating the female flux." There follows a description of the loss of strength, pallor, bearing down pains, ventral pains, weak pulse, "the downfall of nearly all the faculties, especially the vital ones," etc., which could scarcely be improved upon. The reflex or referred nature of the pains and the liability to confuse them with colic, are emphasized.

Even the therapeutics is not so bad as we might imagine, although polypharmacy is rampant. Still, when we think of the considerable degree of polypharmacy in the National Formulary after many years of pleading for the use of one drug at a time, it is not remarkable that the prescriptions of 300

years ago should be rather massive. Ballon remarks that we ought to be free in the use of hot applications, preferring to increase rather than to stop the flow. For an injection, he prescribes a decoction of mallows, arthemisia, red peony seeds, agripalma, parsley root, linseed and fennel, to which is added turpentine, red sugar (sic) oil of lilies and chamomile with the yolks of two eggs.

He states that a bath and the use of the juice of sweet almonds with Hippocratic wine relieved the pains but that they returned as soon as the bath was stopped. Among other measures, we note bleeding, and the internal use of styrax, santal, rhubarb and Venetian turpentine. Cups were applied to the legs on account of the lumbar pain and, later decoction of sarsaparilla was used to induce sweating, and he states that two stinking sweats were produced. We are pleased to learn in conclusion "anyhow" (ut-cunque) "she got well."

In another clinic, under the same title, there seems to be a double infection with gonorrhoea and syphilis and while there is not the same degree of accuracy of nomenclature which we employ, there is a pretty clear distinction between the two processes. "A certain merchant not content with one woman, lived as licentiously as he pleased and, having gone about with prostitutes, was infected, whence both gonorrhoea and a nasty (cacoethaa) ulcer on the genitals remained. At length, taking care of himself and calling a council of physicians, he did not develop lues. But since he considered the affair trivial, the virus of the virulent gonorrhoea which had been too quickly stopped, was revived and he had severe pain in the spine and lumbar region. Beside, the ulcers on the penis returned but immediately disappeared. He had some difficulty in breathing, loss of appetite and emaciated day by day. . . . At the first examination, it was considered that the trouble was due to the vestiges of the infection and that it was the beginning of what Hippocrates called tabes of the back. While guaiac would have been of use to oppose the force of the disease, it was to be feared on account of the emaciation. Accordingly, it was thought best to restore the general health and meanwhile to use temperate hydiatic measures, not to produce sweats but to allow the humors to dry up gradually and the malignancy to be corrected."

The points of treatment were the initial use of a bolus of cassia and rhubarb and bleeding from the brachial, then semi-weekly emollient and detergent clysters. A little turpentine in syrup of althea, "but in small dose so as not to produce gonorrhoea but merely to cleanse the vessels." Frequent rubbing of the spine with oil of mastich with cytonius rosatus and vinegar. Ass milk diet for 20 days. Sarsaparilla poultices for the lumbar pains.

A third clinic, with the same heading, clearly distinguishes gonorrhoea from syphilis. There is the history of neglect after an outside infection, of the connubial embrace after a suppression of the discharge, by the imprudent and ignorant husband, of an attack of dysentery and serous flux affecting the wife during pregnancy, of tracing the lues to a particular prostitute, of the birth of a child apparently healthy in spite of the parental disease, of the development of positive signs of lues and "Spanish scabies"

in the child when two months old, immediately after the administration of cathartics to the mother who had been directed by the previous attendants to continue nursing the child even during the time of catharsis. For the child was prescribed a mercurial ointment made up with unsalted butter and aqua salviae. Lactation was discontinued and bottle feeding instituted. It must be confessed, however, that the poor mother was treated with over a page of the most heterogeneous collection of drugs.

In another article, on uterine flux, the author presents his arguments in more general terms, for considering leucorrhoea as frequently of gonorrhoeal origin and, in the case which serves as his text, he emphasizes as a diagnostic point, the sterility of a woman 40 years old in good hygienic surroundings. He also classifies uterine symptomatology as having its cause in the head, the viscera or the uterus itself. Here, in spite of the lack of modern knowledge of pathology we have a clear anticipation of the neurotic mimicry of uterine disease, which Goodel emphasized and of the differential diagnosis of conditions due to concealed inflammations of the appendix, movable kidney, chronic colitis, etc., which, to this day, are often treated on a false assumption of local uterine and ovarian disease. It is not, of course, claimed that this physician of three centuries ago had a prescience of modern pathology nor that he diagnosed all of these lesions as accurately as they should be at present, but in various places in his works it appears that he had a pretty good idea of the relation of the liver and intestine to what are still called female complaints and of the practical value of cathartics and enemata in the treatment of these affections.

To sum up, Ballon, whose doctorate dated from 1570 and who died in 1616, realized, not only the gross etiology of venereal disease, but its bearing on social and domestic life, the frequency of infection of moral, married women, especially after the suppression of a urethral discharge, the practical value of detective work in seeking the source of a vague disease in a married woman by going back to the prostitutes with whom her husband had cohabited, the gonorrhoeal nature of a majority of pelvic conditions in women, the influence of gonorrhoea on marital sterility, the latency of the disease, the possibility of its revival in the husband after intercourse with his wife, the difference between gonorrhoea and lues in spite of the inaccurate nomenclature of the times, the possibility of their joint incidence, the relation of syphilis to the offspring and the occasional escape of the foetus and its subsequent infection—or at least the late development of signs—the importance of discontinuing lactation and of employing artificial feeding in the case of infected mothers, the value of milk diet laxatives and of resinous drugs in gonorrhoea, the value of mercury in syphilis, even the use of inunctions, especially in infants and the reaction between mercury and chlorids. Even the polypharmacy of which he is guilty still persists and it must be admitted, on the one hand, that many of his composite prescriptions consist mainly of harmless, if comparatively valueless, vegetable drugs and, on the other hand, that most of these drugs are still officinal and that polypharmic prescriptions closely resembling Bal-

lon's are still widely advertised in the medical press and widely used, though they have lost the favor of our leading therapeutists.

Trachoma, states H. W. Wootton (Pediatrics, April, '08), is essentially a chronic affection; individual cases may infrequently exhibit acute exacerbations, manifested by secretion, palpebral edema and even corneal complications. The incipient stage is comparatively short; the long and tedious course is generally unaccompanied by acute inflammatory symptoms. In the early part of the nineteenth century this affection assumed in Europe a virulent epidemic character, resembling gonorrheal ophthalmia; it was intensely contagious; in 1818 five thousand English soldiers became blind from it; from 1813 to 1817 some twenty thousand Prussian soldiers became thus afflicted; when trachoma appeared aboard ship (especially in slaves), the ravages were such that vessels were lost because no member of the crew retained sight sufficient for navigation. Gradually this acute epidemic character subsided; and then trachoma became endemic, lost for the most part its acute characteristics and its intensely contagious nature. The disease is still contagious by inoculation, but not intensely so except during acute exacerbations. It is now found to exist for a long time in one eye without infecting the other; an upper or lower lid may be trachomatous while its complement is normal; nor does the inoculation of a healthy eye with trachomatous material always produce trachoma. The incipient stage is seldom described in text books because it is rarely seen. However, in the trachoma service of the New York City Health Department (of which Wootton as Ophthalmologist of the Department is the Director) twelve cases have occurred among the physicians and nurses. The initial appearances are of a subacute conjunctivitis; both the ocular and palpebral conjunctiva are injected; slight ptosis is apt to appear early; there is generally watery secretion; there may be keratitis with photophobia and lachrymation; for a fortnight to three weeks, the palpebral conjunctiva merely appears hypertrophic and follicles are not discoverable; gradually the irritative stage subsides, lachrymation ceases, the injection of the ocular conjunctiva disappears, the hypertrophy of the palpebral conjunctiva diminishes and follicles appear, at first few in number and in the lower lid. The diagnosis of such incipient cases is difficult, especially in the absence of a direct history of infection. Incipient trachoma is, however, always unilateral, and remains so for a considerable period, whereas catarrh attacking first one eye within a few hours or days involves the other. Nothing else resembles incipient trachoma though, except obstruction of the lachrymal passages, which can always be distinguished by the regurgitation of tears or pus following pressure upon the sac. In the succeeding stages of trachoma the positive diagnosis rests upon the coexistence of two factors—the presence of follicles, and of hypertrophy; the latter signifying follicles deeply seated beneath the conjunctival surface. The coexistence of these two conditions establishes the diagnosis; early in the disease when the follicles may be superficial and hypertrophy therefore not demonstrable, a positive diagnosis may be

difficult or, indeed, impossible; the chronic follicular affections are the despair of the bacteriologist—and here he cannot aid us. Is there a chronic follicular conjunctivitis distinct from trachoma? are the superficial follicles which sometimes are not succeeded by hypertrophy, to be regarded as an independent disease, or merely a mild or abortive type of the graver affection? The appearance of lymphoid follicles may take place under varying circumstances; any agent causing acute inflammation may excite their growth; they are seen in severe cases of acute catarrhal conjunctivitis and disappear entirely with its termination; they are also seen in the declining stage of gonorrheal conjunctivitis, and disappear entirely with its termination; they may be observed in the conjunctivitis caused by atropine; conjunctival follicles do not constitute a distinct disease—they are merely one manifestation of several pathological conditions. Wootton therefore differentiates "chronic follicular conjunctivitis" and trachoma; the former superficial and benign, the latter deep and malignant. How then can we determine if hypertrophy be not present, which superficial follicles will remain stationary and which will be complicated later by deeper infiltration? We cannot always do so, except by repeated examinations. Authors state that superficial follicles, situated only in the lower cul-de-sac and in parallel rows, are not trachoma, but this statement is capable of but very limited application. Some such cases remain stationary or recede; but many others are subsequently associated with hypertrophy and pursue the typical course of trachoma. Follicles associated with hypertrophy indicate "the progressive form of follicular conjunctivitis we call trachoma; when no hypertrophy is present the case may be regarded as suspicious, but a positive diagnosis cannot be made except when the tarsus of the upper lid is involved." Trachomatous follicles when situated somewhat beneath the conjunctival surface are small rounded masses of firm consistence and in size somewhat less than a pinhead; those which are more superficial are larger, lighter-colored (the "frog-spawn" granulations). Both varieties are to be found microscopically in any case of true trachoma; but clinically either may predominate and give its type to the individual case. The clinical distinction between trachoma with small hard follicles, or with large soft follicles is important; for the former is much the more difficult of cure. In the upper lid the follicles or granules often appear first as yellowish bodies deeply seated beneath the surface of the conjunctiva covering the tarsal cartilage; whilst non-trachomatous follicles may exist in the lower lid, all follicles found in the substances of the upper palpebral conjunctiva are those of true trachoma (if we are careful not to mistake for follicles or granules the fine, pin-point papillary projections sometimes found studding the surface of the conjunctiva or fringing its margins). Trachoma has usually involved all four lids by the time it has come under observation; the lower lids are usually first attacked; the disease may also invade the ocular conjunctiva: beginning in the region of the internal canthus. Hypertrophy is most readily observed in the lower lid, the conjunctiva of which in the normal eye is perfectly smooth and flat; pink, especially

toward the free borders, becoming paler as the fold of transition is reached; and the markings of the blood vessels are distinctly visible. But with hypertrophy these appearances are changed; the membrane is obviously thicker; of a duller hue; is thrown into folds; the markings of the vessels are more or less obliterated. In the upper lid the membrane (first at the lateral margins of the cartilage) becomes dusky-red—mulberry hued or like red velvet—and gives to the tarsal margins a hypertrophic, finely granular appearance; ptosis results (which must not be mistaken for that due to other causes, as paralysis of the unstriated superior palpebral muscle). After months or perhaps years the follicles and hypertrophy gradually disappear and cicatrization begins. In the transition secretion is apt to be more marked, after which the conjunctiva becomes thinner, somewhat gelatinous, more and more cicatricial tissue supervenes, and there is a dull, dry, lustreless, scarry condition. By the resulting contraction of the cicatricial conjunctiva the palpebral aperture is narrowed, the globe is compressed, and there is inversion of the lid margins; the fold of transition is obliterated, the cul-de-sac is rendered more shallow, cicatricial bands may develop between the ocular and palpebral membranes, and cysts may form in cases that have never been submitted to operation; vascular keratitis, or (with pain, lachrymation and photophobia) pannus and iritis may then appear. The keratitis does not here subside so easily as in the incipient stage of the disease. Pannus always invades the cornea from above; the parallel vessels running into it from the limbus distinguish it from other forms of keratitis. Small ulcerations may appear, almost invariably superficial—only very rarely perforating. In the worst cases transparency of the cornea is greatly diminished. Total blindness in one or both eyes is possible. All cases of trachoma should submit to operation under general anesthesia. All trachomatous tissue should be expressed, preferably by means of Knapp's roller forceps; and this operation must be supplemented by the use of astringents until all traces of the disease, especially contagious elements, have been eradicated. Sulphate of copper is by far the best local application. Cases of merely follicular conjunctivitis may be treated locally by astringents. When, as sometimes happens, they are due to or at least aggravated by refractive errors, these should be corrected.

Flies and Disease.—Dr. Daniel D. Jackson, whose belief is that flies and not hot weather are intrinsically responsible for the prevalence of intestinal diseases, has during the past summer been trapping flies at a station near Prospect Park, Brooklyn; he has found the relation between the number of flies captured and the number of deaths reported substantially the same as last year, when he made his notable report for the Committee on Water Pollution for the New York Merchants' Association. The fly season opened earlier this season than last, but reached its height in the month of July (as it did last year). The largest weekly number of deaths from such disorders reported in 1907 coincided exactly with the largest catch of flies, being 576 for the week ending August 3; this summer the highest weekly death

record was 448, made for the week ending July 18; but it followed two weeks in which the catches of flies were 2,000 each—nearly as high as the maximum. A notable decrease in the number of deaths corresponded with a catch of a much smaller number of flies. Jackson believes, and no doubt rightly, that the education which the people have had in the last year regarding germ dissemination by flies, has probably had a share in keeping down the death rate.

Preservation of the Ovaries.—R. Peterson (The Physician and Surgeon, Sixth No., 1908), writes in conformity with the wisest and most conservative teaching: At least 10 per cent. of all women regularly menstruating at the time of operation will be free from the troublesome symptoms of the artificial menopause after hysterectomy with removal of the ovaries; the percentage of women with no symptoms after similar operations will be slightly more than doubled if some ovarian tissue be retained; the severity of the symptoms of the artificial menopause is much less when the ovaries are retained after hysterectomy; it is not necessarily true that the younger the woman the more will she suffer from the symptoms of the menopause after hysterectomy with removal of the ovaries; the greatest percentage of suffering occurs in women operated upon between the ages of forty and forty-four. Therefore the rule that ovaries should be removed from patients over forty when hysterectomy is done should not be followed; the frequency and severity of the artificial menopause is not influenced in any way by the kind of hysterectomy done, whether the ovaries be removed or retained; the severity of the symptoms of the menopause is practically the same after hysterectomies with removal of the ovaries for fibroid disease of the uterus and inflammatory disease of the appendages; retention of ovarian tissue after hysterectomy cuts short the period during which patients usually suffer from the symptoms of the artificial menopause; the greater the amount of ovarian tissue conserved, the more will the symptoms of the artificial menopause be mitigated.

Mexico is becoming a most important coffee-producing state, rivalling Brazil in this regard. Mexico's coffee harvest this season is estimated at 92,000,000 pounds—nearly three times as much as she produced last year. The Mexicans consider also that their bean is superior to that of Brazil in quality; and that they are greatly advantaged in the fact of being able to hunt from sea level up the slopes to the plateau and the mountain tops if necessary, for exactly the kind of climate that the coffee bean loves best. Mexico's remarkable conformation supplies her with temperate, arctic and torrid conditions in most of her latitudes. Most Mexican coffee plantations are between two and three thousand feet above sea level. The government of President Diaz has always been eager to promote sources of profitable industry; and it has favored the planters much. The native Indian picks and cures most of the Mexican coffee; and the planters pay him the tribute that his labor is of excellent quality; there is also good and cheap means of transportation to market. Evidently the coffee industry will loom large in Mexico's future.

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THE WASHINGTON TUBERCULOSIS CONGRESS.

THE sixth International Exposition on Tuberculosis which was held in Washington during the three weeks ending with October 10 was successful to a degree which must have satisfied the most sanguine expectations; the Congress itself, in which so many great men in science from all the four quarters of civilization co-operated with our physicians and other humanitarians, occupied the week ending October 3, when President Roosevelt bade farewell to the delegates in an impressive speech. We learn with gratification that the earnest efforts of Dr. Alfred Meyer, of our city, have been successful; and that the exposition which so greatly interested the visitors at Washington will be transferred to the metropolis.

From time to time matter concerning this most notable congress will appear in these columns. Beginning with our next issue we shall month by month set forth a resume of the scientific work of each section. We wish now to give the gist of the important resolutions which the congress adopted in its last full session. The attention of states and central governments is to be called to the importance of proper laws for the obligatory notification by medical attendants, to the proper health authorities, of all cases of tuberculosis coming to their notice, and for the registration of such cases in order to enable the health authorities to put in operation adequate measures for the prevention of the disease. The utmost efforts should be continued in the struggle against tuberculosis to prevent the conveyance from man to man of tuberculosis infection as the most important source of the disease; that preventive measures be continued against bovine tuberculosis and that the possibility of the propagation of this to man be recognized. The public and all governments should be urged to establish hospitals for the treat-

ment of advanced cases of tuberculosis, sanatoria for curable cases and dispensaries and day and night camps for ambulant consumptives who cannot enter hospitals and sanatoria. The congress indorses such well-considered legislation for the regulation of factories and workshops, the abolition of premature and injurious labor of women and children and the securing of sanitary dwellings, as will increase the resisting power of the community to tuberculosis and other diseases. Instruction should be given in all schools for the time to time matter concerning this schools for the adequate professional training of teachers in personal and school hygiene; whenever possible such instruction in elementary hygiene should be entrusted to properly qualified medical instructors. Colleges and universities should be urged to establish courses in hygiene and sanitation and also to include these subjects among their entrance requirements, in order to stimulate useful elementary instruction in the lower schools. The congress endorses and recommends the establishment of playgrounds as an important means of preventing tuberculosis through their influence upon health and resistance to disease. The congress did not give expression to its views as a body concerning tuberculin; and this everyone will deeply regret. We have now to wait until the next congress, to be held in Rome in 1911, for its authoritative pronouncement on this all-important subject.

ECONOMY OF MONEY AND EFFORT IN MEDICAL SOCIETIES.

SOME time ago we urged the members of the profession who were not affiliated with medical societies, what seemed to us the duty that they owed both to the profession and to themselves, to seek such affiliation. One of our readers replied to our article in an ably written and exceedingly frank letter, in which he gave as his reason for remaining outside of his local medical society, not so much the reverse of the various arguments which we had presented, as the very practical one of lack of funds available.

Now it would be very easy to say in a grandiloquent way that no medical society charges for initiation and dues, the value of its services to the individual member; to represent the amount of these charges as a small matter, such a sum, for instance as any one habitually carries in his vest pocket; or even granting that the amount is worth considering, to reduce it to a few cents a day, or to show how it could be saved by the practice of a few small economies.

But, to be as candid as our correspondent, there

are comparatively few physicians so fortunately situated that the average dues of a medical society do not represent a sum of appreciable magnitude and one for which there is nearly always a demand, for insurance, rent, groceries, shoes for the children, some necessary social relaxation which is quite as likely to lead to a return in professional receipts as a point picked up at a medical meeting, or a hundred and two other prosaic items. Neither has it been our personal experience or observation that to deny one's self the little comforts, conveniences and even luxuries, results in the accumulation of a fortune. It is easy to talk about saving a carfare a day, but the extra wear of shoes and an occasional wetting of clothes more than compensate for such a saving, not to mention the fatigue and loss of time which in the long run make the economy a loss.

Without conceding that the benefits of the average medical society are not worth more than the dues, we believe that our correspondent is right in his contention that many members of these societies can ill afford this amount and that many physicians might be induced to contribute their energies and money to the support of societies, if the contribution asked was smaller.

Personally, though, we have always tried to limit our membership to societies which seemed to us absolutely necessary and in which we could take a fairly active part, we are paying somewhere between fifty and a hundred dollars a year for dues and occasional contributions. Without in any way forcing ourself upon societies or becoming conspicuous as a reckless spender of money, we could very easily increase this sum to several hundred dollars a year. Indeed, we are frequently in receipt of circulars and personal invitations which, however courteous, intimate that we are neglecting our own advantages, depriving an excellent institution of needed support, and that not to accede to the invitations is, to say the least, penurious.

We have no reason to think that our personal experience in this regard is at all exceptional. Indeed, the best statistics available show that the average medical income for the United States is not much over, if it equals a thousand dollars, and at least half of this must be counted as an average business expense. The American Medical Association, as at present organized, costs ten dollars a year for its total assessments, including county branches and in most of the cities of the country and many of the rural districts, membership in independent organizations is equally necessary so that the man who fulfills his duty to himself and his profession must expend, on the average, all that he can earn in about five working days for this purpose alone.

We repeat that, in a sense, medical societies do not charge what they are worth, but it must be borne in mind that these societies are not business organizations whose object is to sell a commodity for what it will bring or for what may be considered a fair price. They are essentially co-operative institutions which should consider the welfare of the average potential member.

In many respects, it seems to us that medical societies might well practice the petty economies which are urged upon outsiders as a means of making good the amount of the dues. For example, we are acquainted with a member of one organization which annually expends about 75 cents a head for postage and printing and over \$2.00 a head for refreshments. It prospers financially simply because it can count on three-quarters of the membership staying away from the collations. It is laying up nearly \$2.00 per capita per annum for a club house and urging its members to make large contributions therefor, in spite of the fact that it is a simple matter of arithmetic to show that if the club house were presented outright, it would cost more to run it than to rent more humble but still adequate and really more convenient quarters for meetings. In short, this society which charges five dollars dues, really requires only a dollar and a half.

Most of the members of this society also belong to a county branch of the A. M. A. and pay the same amount of dues for the county and state societies together. By merging the organizations, a single, strong society could be established, with state and national affiliations and the increase of receipts due to the fact that some physicians belong to each and not to the other, would render the one society better off even in the narrow financial sense and would cut the per capita expense in two, even without practicing any of the little economies suggested. We would be the last to complain of the dues of the American Medical Association and the first to acknowledge that the Journal alone is worth the entire charge. Yet this body is a money-making institution and its financial strength is, in a sense, a source of weakness since it is being constantly attacked on this ground and while many of the complaints unquestionably are made with interested motives, there is a strong sentiment that no scientific or philanthropic or co-operative institution should accumulate more than a very small surplus to insure against periods of temporary depression.

Without discussing the temptation to extravagance and even to exploitation of personal influence which many earnest and sincere friends of the association fear from the continued accumulation of a

surplus, or the wisdom or unwisdom of applying this surplus to various enterprises at present largely conducted by private corporations, it is worth while to consider whether there are not enough men in our profession who, like our correspondent, are kept out of society membership on account of the amount of the dues. It is beside the question to argue that the dues are not of themselves excessive or that the benefits accruing are already offered at bargain rates. Neither can we close the issue by merely stating that everyone can and ought to afford them. It is obvious that the receipts from every additional member will more than repay the extra cost of putting him on the membership list, aside from the increased strength which his enlistment represents. It is almost certain that a diminution of dues would increase the membership to such an extent that the net receipts would be swelled, until we reach the minimum per capita cost of membership.

It should be distinctly understood that we are not pleading for a reduction of dues and merging of institutions from the standpoint of those already within the fold, much less from the standpoint of personal economy. Neither do we venture to make detailed statements as to how far these two processes can be wisely carried. But the fact that the actual membership of medical societies is usually far below the census of eligibles and the fact that every little while one of these eligibles is bold enough to set aside any sentiment of false pride and to ascribe his position as that of "a man on the outside," to the expense of membership, seems to us to demand a careful consideration by our societies.

ASIATIC CHOLERA.

CHANTEMESSE prophesied many months ago that this would be a cholera year; and events have certainly justified him. The lay press has made us familiar with the "visitation" just passed; it is our purpose here to note some suggestive details. In St. Petersburg, for example, the disease has been from season to season endemic. Every fall they pray for the winter to come; and when it does the scourge ceases. But only for the time being. For the cholera simply hibernates; it but goes into winter quarters, to renew its murderous work with the return of warm weather; so regularly does this phenomena recur with each season that the people have come to speak of the cholera as their "Asiatic Guest." One hundred and seventy deaths daily were no unusual number for St. Petersburg. The ambulances were much overworked;

white ones for the quick, black vehicles for those who had succumbed; and provided vastly more work than gravediggers could do, how shallow soever they made the graves. The hospitals were overcrowded; and the cholera was still further spread by reason of the premature discharge of patients. "The filth in the market places was indescribable." The czar and others of his ilk fled the capital city; and it was probably well for their skins that they did so. For the cholera appeared in the winter palace of that most inglorious impotentate; the Tauride palace, as also that of a grand duke, were thus visited. The situation was not without its touch of Hogarthian humor. For certain aristocrats and army officers of much reputation for courage, got into a blue funk over the situation. They suffered dreadful psychic tortures; which in turn affected their sympathetic systems in the usual way. Taken to the hospitals, their frequent dejections proved upon examination to contain no vibrios; they had in reality, not cholera, but only the fear of cholera. The most pathetic aspect of all this dreadful condition of affairs lay in the fact that the poor people of St. Petersburg were forced to drink the waters of the polluted Neva, or that of the canals traversing and draining the city; whilst but a few miles away in the hills near St. Petersburg lies a lake of pure crystal water, uncontaminated—but untapped. Had corrupt officialdom but arranged for the transfer of this water to the city by using legitimately the taxes wrested from its poor, there need have been no cholera; it was preferred instead—to supplicate their eikons. Can there be any sadder commentary upon the proceedings of a government recognized in civilization in this twentieth century?

We in America have had occasion to feel no other than a sympathetic interest in this gruesome picture; our coast health officers deserve and have our fullest confidence. The incubation of the disease is from twelve hours to five days, within which time any case from a Russian (or any other European) port would be developed and detected. There is besides, we believe, now only a single line of steamers plying between the port of New York and Russia. We must recognize, of course, that fomites may, as well as human beings, transmit cholera. But here also we have no occasion for alarm. Cholera is not an air-borne disease, like scarlet fever; none of the terror of mystery, attends a disease which can flourish only amid filth, and which can be "caught" only by being swallowed. Our local sanitary conditions are excellent; the chance that anybody among us will eat or drink vibrios from contaminated imported articles is so remote as to be negligible. Only packages—and not their contents—can be contami-

nated; and the disinfection is thorough as practiced by our authorities. We must, unfortunately, in our national character, feel some concern; for now the sun never sets on our territory. When it is night-fall here the sun is rising upon our fleet about to arrive in Manila. What then are the conditions in our Philippine possessions? Between January 1 and August 15 of this year there were in these islands 12,316 cases of cholera, with 7,830 deaths; since the latter date and up to the middle of October last the average weekly mortality from this cause has exceeded 500. And this despite that the disease is being fought with all known remedies, methods of disinfection and quarantine. Our Philippine commission officially reported in 1906 that "the plan of campaign for the suppression of the disease has included the isolation of the sick in cholera hospitals when they could not be cared for safely at their homes, the thorough disinfection of all contaminated houses and effects, the protection of the city water supply and the closing of wells in Manila, the prohibition of the sale of foodstuffs likely to spread infection, the protection of other foodstuffs by fly screens, and the education of the public in the precautions to be observed in order to avoid contracting the disease." Manila has not escaped the epidemic of this year; but, largely through these means, it has been under better control than in earlier experiences. There is in the Philippines little danger for our American soldiers and residents; their safety lies entirely in their own hands; they understand the essential prophylaxis; they are careful what and how they eat and drink. "The mouth is cholera's highway." Knowing this there is not much more danger for them than there is for us at home. But unfortunately the Filipinos do not, as they should, observe the precautions here set forth; and so become victims to the number we have indicated. However, they are as fast as possible learning their lessons in prophylaxis, so that undoubtedly the disease will disappear from our colony in the Antipodes.

THE ACHIEVEMENT OF AUTHORITY IN MEDICAL REFORMS.

PESSIMISTS are wont to concede the theoretic desirability of some important medical issue but to sneer at its advocates as visionaries who prate of what might or ought to be done but who forget the practical difficulty of securing legislation and of placing the proper executive force against the obstacle that lies in the path.

We have, at present, no pet scheme to urge but we wish merely to call the attention of our readers to the general principle that a genuinely worthy is-

sue, in medicine or anything else, is almost certain of accomplishment if it is wisely and persistently urged. Every accomplished reform, in any line of human interest, prepares public sentiment for the next and at no time in the history of the world has it been so possible to put new projects into execution as at present, with the exception of the relatively brief and local duration of the influence of a despot who was both wise and good.

In one of the great Paris museums, stands a steam road wagon made in 1789. While clumsy and lacking in most of the modern refinements, it was—and is, barring corrosion of certain parts—a practical machine, which actually went and at a fair speed in contrast to the general slowness of locomotion at the time of its invention. Similar machines were actually used in England, a little later, to haul stone and coal. Apparently the only good reason why automobiles did not become a considerable factor in the world's progress a century ago, was the mere inertia of conservatism. To-day, so far from having to combat prejudice due to its novelty, a new invention has a signal advantage which is often sufficient to overcome the disadvantage of its obviously remediable crudities and of a price not only in excess of the article with which it comes into competition but far beyond that which is adequate to return a profit on the investment. With aerial navigation merely in the stage of relative success of preliminary experiment under the most lenient conditions, it already has a vocabulary, a mass of literature, both scientific, descriptive and romantic, and governments are already calculating on its adaptability to war while political economists are weighing its bearing on future diplomacy and international ethics.

Thus, if we are to be pessimistic at all, there is need to be anxious, not that we may fail to carry out a reform on which our hearts are fixed, but that we may make innovations which subsequent experience will show to have been too radical.

It may be of interest to cite some concrete examples of the manner and degree to which medical aspirations have become tangible realities.

Some thirty years ago, a prominent physician lost a little daughter of diphtheria. The funeral was public and was largely attended. Six of the child's playmates, in white dresses, acted as pallbearers. For many years past there has scarcely been a community in the country in which such a procedure would be allowed by the health authorities, much less a physician of any standing who would countenance so flagrant a violation of the principles of hygiene.

At about the same time, the principal of a public school had a child sick with scarlet fever. He

changed his clothes, went to another chamber to sleep and did not see his child till the stage of convalescence was well advanced. The school authorities and his constituents laughed at his excess of caution but praised his self-sacrifice in guarding the interests of his pupils. A few years ago another principal in the same city did exactly the same thing. He was severely censured and almost lost his position.

During the Centennial Exhibition in Philadelphia in 1876, visitors could see faecal matter running through the gutters of the principal downtown streets. At about the same time the "sanatization" (sewerage) of several of the great European cities was instituted, although sewers had been known not only to the ancient Romans but to the Babylonians, five thousand years ago.

Men scarcely of middle life can remember when, on a trip to Europe, it was unsafe to drink the water in a city, even as gauged with the lax standards in vogue in America, where the water was better merely on account of the less density of population. They can remember when every backyard held its privy and when a bathroom or indoor water closet was a curiosity.

It is scarcely more than a decade since American cities began to consider the desirability of filtering or even guarding their water supplies. Nine years ago the health commissioner of one of our large cities—well within the first dozen in order of population—had to battle with the fire commissioners, the water works and the board of aldermen, to close an intake which admitted demonstrably contaminated water, this intake being used in winter as a matter of convenience and economy, rather than one admitting relatively pure water but which was more liable to interference by accumulation of ice. He won his battle, not so much by virtue of actual legal authority as by the judicious wielding of the big stick, backed by the very forcible argument of a considerable epidemic of typhoid which cost the city something like a hundred lives and a hundred years of human wage-earning capacity.

A generation ago the medical profession had just begun to win victories against the specious cry of free medicine, when any one might begin practice without any formal preparation at all. Twenty years ago, it was in the same position regarding the doctrine that a medical student must have at least a smattering of a general education and an adequate amount of didactic and clinical training. At that time it was possible for a man to practice medicine after two terms of study of less than five months' actual work in each, and with an education barely beyond the line of illiteracy. At present, a high

school education and four years of medical training, of about eight months each, may be considered the average acquired standard, with practical safeguards against itineracy and the worst forms of quackery.

The present efficiency of our state, county and municipal boards of health, with their well recognized authority to require the reporting of disease, their bacteriologic laboratories, their control over water supply, sewerage, the housing of the people in accordance with hygienic principles, etc., is almost inconceivable when we reflect that ten or fifteen years ago they were little more than adjuncts to the poor department for the purpose of affording rough and ready medical treatment for the indigent.

The pure food and drug law, less than two years old, has already accomplished a great deal, simply through fear of the effects which it might have, although there has not been time for a systematic pursuit of its explicit and implicit powers. It has also, without contradiction, established a precedent regarding the right of the general government to look after the welfare of its citizens. Equally important in the latter respect is the Interstate Commerce Law. While there is still no cabinet officer entrusted with the public health, the functions of the Marine Hospital Service have been enlarged to include much of the authority of such an officer; the recent ruling with regard to the command of hospital ships has clearly established the precedent of practical medical supremacy in medical matters under the domain of the general government; and it seems to be only a question of a comparatively short time when formal national supervision of sanitary matters will be assured, either by the establishment of a cabinet office or by some equally efficient device.

Largely within the medical profession itself, we have witnessed, in spite of influence and power which seemed impregnable, the correction—not perfect, it is true—of the hospital and dispensary abuse, the curtailment of commercialism in medical teaching, the immense extension of the influence and practical benefits of organized medical societies, the reunion of the New York medical profession, which was more than a local benefit, and an enormous advance in scientific standards.

We have purposely avoided reference to scientific progress as such, to the perfection of technic and to the practical results in the diminution of disease and mortality and the noteworthy increase in the average longevity. We can merely allude to the increased facilities for research, the improvement in our hospitals, the perfection of our institutions for dealing with the defective classes, the establishment of sanitariums for the treatment of tubercu-

losis and many similar advances.

The point that we have tried to keep clearly in mind is that there has been awakened a widespread popular interest in medical matters, that the influence of the medical profession to-day is unified, that it need no longer appeal on an individual basis for private charity for directly utilitarian purposes but that it can secure legislation, executive authority and public support for any measure which it sincerely wishes and which it presents in a reasonable way and with due tenacity of purpose.

The Nature of Shock.—S. J. Meltzer (Archives of Internal Medicine, July, '08), considers the various theories set forth to account for this phenomenon; and details his own experiments on dogs and rabbits to show the part played in shock by inhibition. Opening of the abdomen and evisceration has invariably led to reduction of the sensibility of the skin and to general apathy, from both of which the animal is apt to recover sooner or later when the viscera are properly taken care of. Both these conditions may sometimes attain a considerable degree of intensity, yet at the same time the heart and blood pressure remain entirely unaffected. If the rough handling of the viscera continues the insensibility and the general apathy increase. In vigorous animals this procedure does not readily lead to the surrender of the bodily functions to complete shock; in them even after many hours of exposure and handling, blood pressure, heart and respiration still suffer little. And in less vigorous animals the last named functions gradually surrendered to the effects of continuous rough handling of the viscera; these animals gradually sank into complete shock. Finally, in animals with reduced body resistance shock appeared soon after opening of the abdomen and evisceration, Meltzer believes that the various inquiries which are capable of bringing on shock do so by favoring the development of the inhibitory side of all the functions of the body. This predominance of inhibition appears first in those functions which are of less immediate importance to life and are, therefore, less insured by safeguards protecting their equilibrium. With increased injury the inhibition spreads also to the more vital and, therefore, better-protected functions of the nervous system. In shock development the early inhibition of the functions of lesser importance might even be looked on as being, in a degree, conservative measures of protection of other more important functions of animal life. Every bodily function has its nerve fibres which excite and which inhibit it. The normal state of a function results from a proper balance of antagonistic stimulations; and the important functions are well provided with factors of safety to maintain the normal equilibrium. But under unusual abnormal conditions there may arise a tendency toward a deviation in one or the other direction—either of excitation or inhibition. Meltzer's theory of shock assumes that the injuries which produce this condition disturb the equilibrium, causing a tendency toward inhibition.

BIBLIOGRAPHICAL

A Text-Book of Operative Surgery Covering the Surgical Anatomy and Operative Technic Involved in the Operations of General Surgery Designed for Practitioners and Students. By Warren Stone Bickham, M.D., Phar. M. Junior Surgeon, Touro Hospital, New Orleans; late Surgeon to Manhattan State Hospital, New York; late Assistant Instructor in Operative Surgery, College of Physicians and Surgeons (Columbia University), New York, etc., etc. Third edition, greatly enlarged, containing 854 illustrations. Octavo pp. 1,206. \$6.50. 1908. Philadelphia and London: W. B. Saunders Company. 1908.

The present edition of this excellent work has been increased in size over the previous one, and the illustrations largely added to.

The sub-title "The Surgical Anatomy and Operative Technic Involved in the Operations of General Surgery," sufficiently designates its scope, and differentiates its usefulness over other similar works.

It is a presentation of the best technic of modern surgeons in the operations mentioned, with a brief summary of the descriptive and surgical anatomy of the structures involved, fully illustrated.

The general practitioner and the student will not be disappointed in its perusal, and there should be no hesitation as to adding this book to one's library.

High Frequency Currents. By Frederick Finch Strong, M.D., Instructor in Electro-Therapeutics at Tufts' College Medical School, Boston. With 183 illustrations in the text. \$3.00. New York: Rebman Company. 1908.

The author has been continuously engaged for many years in a clinical and laboratory study of the various types of high-frequency currents; hundreds of cases have been treated, and many important facts recorded, which are given to the profession for the first time in this volume.

Those who are interested in the subject of electricity as a therapeutic measure should possess this book.

A Manual of Clinical Diagnosis. By James Campbell Todd, Ph.B., M.D. Associate Professor of Pathology, Denver, and Gross College of Medicine (University of Denver); Pathologist and Clinical Microscopist to Mercy, St. Anthony's and the Denver City and County Hospitals. Illustrated. 12mo. pp. 319. Philadelphia and London: W. B. Saunders Company. 1908.

This little book presents a clear and concise statement of the more important laboratory methods which have clinical value, and a brief guide to interpretation of results, just what the student and the general practitioner require.

The methods given are practical, well illustrated and as simple as possible.

It will be found most useful for its purpose.

The Campaign Against Tuberculosis in the United States, including a Directory of Institutions Dealing with Tuberculosis in the United States and Canada. Compiled under the direction of the National Association for the study and prevention of tuberculosis. By Philip P. Jacobs. Pp. 467. Oc-

tavo \$1.00 postpaid. Charities Publication Committee, 105 East 22nd street, New York. 1908.

This is the first of a series of books to be published by Charities Publication Committee, acting for the Russell Sage Foundation for the Improvement of Social Conditions.

The book is sold at actual cost and the sole reason for its publication is to help in the worldwide movement for the prevention of tuberculosis.

The volume contains a vast amount of information which will be found of interest to the layman as well as to the physician.

A Laboratory Guide for Histology: Laboratory Outlines for the Study of Histology and Microscopic Anatomy. By Irving Hardesty, A.B., Ph.D. Associate Professor of Anatomy in the University of California, with a chapter on laboratory drawing by Adelbert Watts Lee, M.D. Assistant in Anatomy in the University of California. With 30 illustrations, 2 of which are in colors. Octavo pp. 193. \$1.50. Philadelphia: P. Blakiston's Son & Co. 1908.

The purpose of this little book is economy of time and labor for both the instructor and student. It will be found a distinct aid toward the accomplishment of a greater amount of work of better quality.

The chapter on laboratory drawings will be of great service to the beginner. Directions are given in respect to equipment and for such procedures and processes as are considered most essential.

It is an excellent text-book.

A Manual of Bacteriology. By Herbert M. Williams, M.D. Professor of Pathology and Bacteriology, Medical Department, University of Buffalo. Revised by B. Meade Bolton, M.D., Washington, D. C. One time Associate in Bacteriology, Johns Hopkins University, etc., etc. With 113 illustrations. Fifth edition, revised and enlarged. 12mo. pp. 466. \$2.00. Philadelphia: P. Blakiston's Son & Co. 1909.

The preface of this excellent book says that it is the purpose of the author to give in the smallest possible space the facts which a physician must know, with some of those which it is desirable that he should know, and a little of that which he may learn if his needs or inclinations lead him to go further, and this object has evidently been kept constantly in mind in revising the text of the present edition.

The book is intended and is popular with medical students, has been revised to date, and the text is made as concise and clear as possible for practical purposes.

Text-Book of Nervous Diseases and Psychiatry for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D., LL.D. Professor of Nervous Diseases in Cornell University Medical College; Visiting Physician to Bellevue Hospital; Neurologist to the Montefiore Hospital, etc., etc. Seventh edition. Illustrated by two hundred and sixty-one engravings and three plates in black and colors. Octavo pp. 782. \$5.00. New York: William Wood & Co. 1908.

The present edition of this complete work has been revised in order to make a correct presentation of

the subject to date. There are many additions to the text, and to the illustrations, but the pruning has been sufficient to restrict the bulk within previous limits.

A work that has reached its seventh edition, has earned for itself a right to exist, and we are confident that no member of its class is more popular with readers.

The author intended his book for the student and practitioner, as well as for the specialist, and he has not been disappointed in its reception. It will continue to be the leading text-book in our colleges without doubt.

The text is stated in understandable language and is practically illustrated.

The Cure of Rupture by Paraffin Injections. By Charles C. Miller, M.D. Comprising a description of a method of treatment destined to occupy an important place as a cure for rupture owing to the extreme simplicity of the technic and its advantages from an economic standpoint. 16mo. pp. 82. Prepaid \$1. Published by the author, 70 State street, Chicago.

A Common-Sense View of the Mind Cure. By Laura M. Westall. Pp. 124. 12mo. Cloth, 75c. net; by mail, 81c. Funk & Wagnalls Company, New York.

The scope of this little book is to explain the workings of what is popularly known as the mind cure in the treatment of human ills, rather than as a special argument for or against its efficacy.

The Age of Mental Virility. An inquiry into the records of achievement of the world's chief workers and thinkers. By W. A. Newman Dorland. 16mo, 229 pages. \$1.00 net, postage 7 cents. New York: The Century Co.

The effective, moving, vitalizing work of the world is done between the ages of twenty-five and forty, might be the text of this interesting little volume. The pages show that Dr. Dorland has gone into his investigation earnestly and faithfully; and he has cast into interesting and valuable tabulated form the records of four hundred men famous in all lines of intellectual activity upon which his conclusions are based.

The author is convinced, and most readers will find his claims convincing, that the age of the acme of mental activity, as shown by these fairly chosen records of the famous men of modern times, lies between forty and sixty, and that, provided health and optimism remain, the man of fifty can command as readily as the man of thirty.

It is a stimulating and optimistic little book.

Spectacles and Eyeglasses, Their Forms, Mounting and Proper Adjustment. By R. J. Phillips, M.D. Ophthalmologist Presbyterian Orphanage, etc. Fourth edition, revised, with 56 illustrations. 12mo. pp. 91. \$1.00. Philadelphia: P. Blakiston's Son & Co. 1908.

This little book is intended to supplement studies in refraction and to give the student that knowledge of the correct placing of the glasses before the eyes without which the most painstaking measurement of the refraction will frequently fail of practical results. The book is fully equal to its purpose.

CORRESPONDENCE

CREOSOTE INHALATIONS IN TUBERCULOSIS.

To the Editor of the MEDICAL TIMES:

The Washington congress, brought together mainly to see in what way we could hope to wage more successful war against the disease with highest mortality, has come to an end. Much has been learned, no doubt, but are we nearer to a practical, efficient treatment of the disease than prior to its advent? I believe we are, in as much as interest is now widespread and there is urgent striving in many directions, to better the conditions under which immense numbers of people live. No treatment with drugs, or serum, will ever accomplish eradication of pulmonary tuberculosis or other forms of tuberculosis, less prevalent and important, until conditions of life among the many are greatly improved. Get rid of tenement houses, of crowding, of poor food, insufficient air and sunlight and tuberculosis will tend rapidly to disappear. More play and less work for the lower stratum of society, less alcoholism among rich and poor, a wiser oversight and control of venereal diseases, more cleanliness, better drainage and better hygiene will help hasten the day of disappearance and cure of a dread disease to all classes.

With all this, let food supplies be suited to conditions and ages and climates and professions and let them be properly prepared and served, and we shall with the foregoing well observed and practically followed by all, approach the best we know for eradication of tuberculosis from off the earth. Meanwhile, however, we have a means long and faithfully tried, proven by much and reliable testimony to be good and practical, which is readily available to everyone threatened or affected with tuberculosis in almost any form, as I believe, but especially adapted to all tuberculous diseases of the respiratory tract, and this is the use of antiseptic inhalations of creosote. There are no objections, at least of much, or indeed of any value, to their use. There are many and weighty reasons why they should be used. Antiseptic inhalations with beechwood creosote, alcohol and spts. chloroform are not a panacea, a cure-all, but with other sane and well known measures of treatment, they relieve symptoms and help cure wonderfully. They must be used frequently, intelligently, persistently many weeks, many months. The patient must learn sooner or later to wear the inhaler many hours each day and during the entire night frequently. After a while sleep is undisturbed with the inhaler properly applied over nose and mouth and thus the patient is kept in balsamic, antiseptic atmosphere the greater portion of the time. Night sweats disappear, weight increases, sputa diminish and are changed for the better and with this change and lessening there is also less cough and more sleep and rest, and hence strength and bodily vigor increase notably and continuously. Appetite and weight also improve, and as the patient notes improvement so his courage increases and renewed hope comes to him. Bacilli are soon recognized in fewer numbers, and in six months, one year, or more, in many cases tubercular bacilli are no longer discovered. Is there any other treatment now

known about which as much can be said truthfully? I do not believe so. What are the proofs? These have been given anew and anew again—and finally, with all the references to my past work and experience, in the *Am. Jour. Med. Sciences* for August, 1908. There will be found the picture of "the perforated zinc inhaler" so familiar to all, and there will be found the formula of the inhaling fluid which I use in the large majority of cases, i. e., aa creosote, alcohol and spts. chloroform. I have insisted in this article and elsewhere, that in every dispensary, every hospital, in private practice, everywhere, the inhaler and inhaling fluid should be used—if pulmonary or laryngeal phthisis be declared, or even suspected. They do not harm; they are almost invariably highly beneficial. Combined with other well known means, they will do more than anything else, I hardly affirm, to relieve a vast amount of suffering and promote and cement a cure in very many instances, and in instances frequently where without the inhalations the patients would not recover. In tenements, crowded, ill-ventilated, dark, unsanitary—they will do much, very much, in the way of prevention, if not cure. They will prevent in a measure contagion being carried through the air from particles of sputa held in suspension and which are arrested, or partly or unduly disinfected, by the inhaling fluid on the sponge of the inhaler.

I would not again bring this well-worn, almost thread-bare, subject before my professional brethren, except that I am absolutely convinced of its superlative importance at the present time, to thousands of affected, or menaced, persons with tuberculosis. I earnestly desire that they should be benefited by the knowledge herewith given, if put into practice.

BEVERLY ROBINSON, M. D.

New York, October, 1908.

After Treatment of Laparotomy.—M. Jerusalem (*Munch. Med. Woch.*, May 26, '08), believes that the painful symptoms often remaining after otherwise successful operations are due to adhesions of the various organs, especially the intestines; these frequently occur when primary union does not take place and the wound must be drained. We keep the intestines from remaining quiet, no longer using morphine; diet is full from the first day; oil injections are given; also hypodermatics of physostigmin. High injections in the knee-chest position; injections of air energetic massage and faradization of the abdomen are employed to stretch the adhesions. Jerusalem has been successful with the Bier suction glass in a series of cases; on the third to the fifth day an oval bell-glass is placed over the laparotomy scar for from fifteen to twenty minutes. The skin becomes red; there is a sensation of comfortable warmth; after the suction is removed the feeling of pressure is less. Often from six to twenty-two sittings the painful symptoms have disappeared, and resistance has given way to a soft and supple condition; obstipation is relieved; all of twelve patients which Jerusalem has thus treated were willing to undergo the treatment and were satisfied with the results; the relief may be due to hyperemia or to the mechanical action of the force applied by the vacuum.

RETROSPECTIVE

Autumnal Typhoid.—It has long been observed that the curve of incidence of typhoid begins to rise from its minimum, toward the close of summer, continues to rise rather rapidly during the autumn, remains fairly high during the winter and sinks with the advent of the next summer. This statement is made purposely in rather general terms, for the reason that exact figures vary considerably with different years and for different localities and also for the reason that it is, in general, liable to prove misleading to attempt to follow any statistic study of any natural phenomenon with too much minuteness. In the first place, all statistic study is based on collation of data which are themselves more or less inaccurate, and especially so in the case of disease, since many factors lead to inaccurate diagnosis and since, in some instances, there is strong temptation to the falsification of reports.

But the general fact of a seasonal and fairly regular curve of incidence for this disease, is indisputable, at least for the larger American cities. Without considering the earlier explanations offered for this phenomenon before the typhoid bacillus was discovered, it may be worth while to state that the clear conception of typhoid as a germ disease, and therefore as communicable from person to person, in the broad sense, could not have existed before the actual demonstration of the parasite. The exanthemata, on the other hand, were so clearly contagious, it was so easy to trace their connections with antecedent and subsequent cases, their development was so sudden and so entirely independent of apparent causes other than infection, that on purely a priori logic, it was possible to predicate a living virus. Indeed, it must be confessed that these diseases whose existence undoubtedly led to the primary conception of germ causes, have not as yet been proved to be of such nature by the indisputable demonstration of a germ. Moreover, so far as the evidence goes, it is probable that this whole group of infections is due to protozoan, animal germs, and not to bacteria, vegetable germs, as in the case of most of the clinical infections of Europe and America.

While, even since the demonstration of the typhoid bacillus, the explanation of the seasonal curve of incidence is usually explained on climatologic grounds, as affecting the viability and transmission of the bacillus, we venture to assert the somewhat heterodox theory that climatologic factors play a subordinate and indirect role.

Unlike many infections, typhoid is, for all practical sanitary purposes, limited to the human race, so that each case depends pretty directly upon some antecedent case. We do not deny that typhoid may be produced in the monkey, nor that its bacilli may be passed through the alimentary canal of a lower animal, even with the production of some symptoms of disease, if the dose of the culture is massive. Neither do we deny that fomites may be carried by flies and other insects or by larger animals. Indeed, many epidemics occurring along milk routes have been definitely traced to the conveyance by cattle of particles of human faeces thrown onto manure piles.

But there is no such relation of typhoid to the lower animals as in the case of tetanus, anthrax, etc., or even tuberculosis. Neither is typhoid conveyed by any essential insect carrier as in the case of malaria, yellow fever, etc.

On the other hand, typhoid is not a contagious disease in the ordinary sense, although non-immune nurses occasionally contract it after a prolonged and exhausting attendance on a patient. In this connection it should be remembered that when we say a disease is contagious, we do not mean that it is contracted by contact but that its germs are so light and numerous and so readily disseminated in the air, that it is liable to infect anyone who comes near the patient, even without actual contact. However, in so far as typhoid is transmitted by apparent contagion, the means of transmission is probably exactly the same as occurs in the ordinary, indirect method and, curiously enough, in spite of the repeated opportunities for accidentally conveying particles of infectious discharge to the lips or into the food and drink of the nurse, statistics do not show that nurses are more disposed to this disease than others.

While it has been demonstrated that flies may carry infection from latrines to food, the importance of this method seems to have been much exaggerated and, at any rate, it is mainly confined to outdoor camps and, even then, is preventable by simple precautions dictated by common decency as well as sanitary science. It is also obvious that typhoid developing in an unsewered community with scarcity of deep and covered privy vaults, and with a dusty soil especially if the locality is windy, may be locally conveyed by dust, either directly to the lips and nostrils, or indirectly through settling of the dust on food and into water.

But by far the most important means of conveying typhoid is the drainage of excrement into water supplies. Even transmission by ice, though virtually a subdivision of water infection, is relatively infrequent, since once freezing kills a large proportion of the bacilli and since alternate freezing and thawing or maintenance of a low temperature for a few months destroys all of the bacilli. The contamination of milk has already been mentioned. It is always adventitious and, if not due essentially to water contamination, it depends upon gross indecency and uncleanness in the management of a local case. Fresh vegetables and small fruit may be contaminated by fertilizing with infected human excrement but, on account of the tendency of sunlight and natural vicissitudes to destroy the bacilli, it is not a frequent means of transmission.

In studying water transmission of typhoid, we are at once struck with two important facts. First, the bacilli do not multiply in the water but merely stay in it till they are sedimented, filtered out, or killed by the vicissitudes of non-parasitic existence. Secondly, a very minute colony, possibly a single bacillus, is adequate to produce an infection, but, on the other hand, the law of chance, depending chiefly on the relative bulk of infectious material and of the water supply, is a marked factor in determining infection.

These facts have some important corollaries. With reference to the first, we set aside all of the old-

fashioned sanitary rules as to time and distance in the self-purification of streams, etc. A slow running stream will, of course "purify" itself, that is, allow sedimentation and destruction by natural vicissitudes, in less distance than one with a strong current. A shallow stream that disappears in sand every little way, will purify itself by filtration in a short distance, whereas one running in an uninterrupted channel or that merely hides itself in coarse gravel or under rocks, will not. A well theoretically contains filtered water, but it is often fed by a subterranean stream in a fissure of rock or there may be gross contamination through the cracks in the boards over it from soiled shoes, and there is a case on record in which chickens were seen to kick typhoid excrement onto such a platform, with further local production of typhoid cases. The farther down stream a source of water supply is, the greater is its liability to contamination. The larger a water supply is, in regard to its water shed, the greater is its liability to contamination, but, on the other hand, it is usually larger in bulk relatively to the amount of contamination, so that there is less probability of any given day's ration of water being infected. Contrasting a well, the water supply of a single rural family, with the supply of a large city which is not specially guarded against typhoid, it is obvious that the former is less likely to be infected at any given time while the latter is almost always more or less contaminated. But, when the former does become contaminated, the probability is that every susceptible person in the little community that uses the water will develop typhoid whereas, in the large city, there will be a fairly continuous incidence of typhoid of low degree numerically, partly because of the great dilution of fomites calling into action the law of chance, partly because, at any given time, a considerable part of the community has been immunized by previous attacks. Thus, the most glaring epidemics of typhoid are found in communities of a few thousand inhabitants, whose water is only occasionally contaminated by drainage but when it does become contaminated, the two factors of lack of dilution and lack of constant gradual immunization result in a fulminant epidemic. But we must bear in mind that the single family epidemic is really greater, in proportion to the population exposed and on the other hand, that the pretty constant annual incidence of a city with an unguarded water supply is quite as serious in the long run and perhaps more important on account of the greater aggregate numbers involved.

The seasonal curve of typhoid incidence is not easily accounted for. We might on a priori grounds, expect one of the following phenomena:

1. A sudden rise after the first spring thaw has liberated ice-bound faeces from vaults and the surface of the ground. This phenomenon has been observed in the case of fulminant epidemics in towns of a few thousand, but similar epidemics have also occurred at other times and there is no such general rise of the curve of incidence for large cities is no such general rise of the curve of incidence for large cities or for the community generally.

2. A similar rise after the rains of the autumnal equinox. To some degree, the principal rise of the

curve corresponds with the equinox, but the former has begun before the equinoctial storms and certainly before the additional period of two weeks required for incubation. The curve rises about as would be expected from the geometric increase of sources of contamination and bears no close relation to the varying occurrence of the equinoctial storms.

3. A marked rise with the development of dry, dusty weather and with the swarming of flies. These two plausible factors occur at just about the time that there is an enormous aggregate consumption of water on account of thirst, and increased use of ice, and of small fruits and vegetables which might have been contaminated by fertilizers. In spite of the fact that all five of these factors overlap, with their middle point at about the first of July, it is nearly two months later that the rise of incidence begins and the curve has fallen steadily during the period in which we should expect it to rise following the spring thaws and freshets and with the increments of the various factors just mentioned.

4. Considering general hygiene rather than climatology, we might imagine that typhoid would become rampant after the general resistance had been lessened by indoor life due to cold weather and that it would increase during the last few months of the winter, culminating in the damp, changeable weather of late March, April and early May, according to the exact local climatologic conditions. On the contrary, the rises of incidence begins at the time when the optimum of general health has been achieved by fresh air and vacations, the maximum is reached at about the time that close indoor life begins and certainly well before indoor life could have produced any considerable aggregate lack of resistance, especially if we allow for the two weeks' incubation. Moreover, as the effects of indoor life become more and more marked the typhoid incidence rapidly falls.

In tracing the probable cause of the autumnal rise in typhoid incidence, we must bear in mind certain facts regarding dates. In the first place, the actual infection of any given case occurs just about two weeks before the commencement of symptoms and from $2\frac{1}{2}$ to 3 weeks before it is placed on record. In the second place, as for any communicable disease, a notable rise will not be manifest until there has been time for about three generations of cases, although, of course, the primary fomites do not infect all of the secondary cases at the same time and there is an overlapping of generations. Still, five or six weeks will be necessary to develop a considerable number of cases and to alarm the health officials and the public so that special pains will be taken to prevent further infection. Meanwhile, before the requisite measures have been put successfully into practice, at least one more generation of cases will have reached the unnoticeable, incubation stage and it will be quite a little while longer before carelessness, indifference and ignorance will have been latched by these precautions so that the fall of the incidence curve will be quite slow.

Taking these arithmetical facts into consideration, along with the general experience of the profession and especially of sanitary officers, with typhoid, they correspond pretty closely with an initial rise of typhoid infection beyond what may be termed the en-

demic minimum, somewhere about the first of August. The first batch of cases conspicuous in statistics will then be reported in about the third week of August, and the theoretic third generation will occur or rather will appear clinically, about the first of October. At this time, it will be obvious that there is a more or less extensive epidemic of typhoid and, without thinking deeply, we shall ascribe it to the equinoctial rains. Undoubtedly the flushing of contaminated surface water into streams will aggravate the sanitary conditions of unguarded water supplies and, in spite of the starting of the prophylactic machinery, typhoid will continue to increase for a couple of months longer so that the maximum of the curve of incidence, as marked by the clinical recognition of cases, will fall usually somewhere in the month of December.

The attempt has been made to explain autumnal typhoid by dietetic irregularities and gastro-intestinal disturbances due to the sultry weather of August and early September and also by the recrudescence in the activity of flies in September. But, by this time, most of the fruits and vegetables that might possibly have been directly contaminated have passed out of season, cold water has been drunk in large amounts for at least two months and, if ever, fly screens have been gotten into place and they are not usually removed till considerably later than necessary.

There is only one explanation for these paradoxes that occurs to the writer and that is to consider the outdoor vacation season as the cause of the rise of typhoid incidence, instead of a favorable factor. As seen, the actual etiologic beginning of this rise occurs at about the first of August and this is the average time at which there is large exodus from the city into the country, where local contamination of wells and small streams is likely to occur. At one time the writer had under treatment and indirect observation, three cases of typhoid, apparently dating to a single picnic at which water had been drunk from a suspicious well. Throughout the late fall, winter and spring, the great majority of city dwellers use only city water while many of the better class use special table waters as a matter of general precaution. In the summer, and early fall, nearly everyone gets into the country at least occasionally and drinks water from suspicious sources. Many cases of typhoid develop in cities after the completion of the vacation, corresponding to the incubation period of typhoid. Meanwhile, the privy vaults in the country have been gradually filling up, and as a rule they are not cleaned out till the summer guests have departed and until the pressure of summer work is over. Especially during the equinoctial rains, they overflow into streams, but more or less overflowing occurs during the occasional heavy summer showers and the cities feel the effect, not only in the cases which have brought typhoid from the country but as the result of the gradually increasing and delayed contamination of the watershed from which they derive their water supply.

Hospital Reform in New York City.—A commission appointed by the Mayor has recently submitted an important report. It finds that the public hospital facilities are inadequate and that the ambulance

service is chaotic; it recommends therefore that the charter be amended to provide for a Department of Public Hospitals, administered by a commissioner appointed by a board of trustees—a change very desirable by reason of many conflicts in the present tripartite management. There has never been an attempt to place ambulances with reference to convenience and speed; whether it responds or not, how long it takes, the patient's condition on arrival, whether and when it brings him to its own hospital or any other, whether and when the ambulance becomes ready to answer another call—such matters as these are of no apparent concern to any particular official and are not covered by law, rule or regulation. The system or rather the lack of system of hospital control (but not of the men in charge) is very severely criticised; the Departments of Public Charities and Health, and the trustees of Bellevue and Allied Hospitals have jurisdiction, which, however, often conflicts, with poor service resulting. The proposed department should have charge also of the ambulance service; and of all existing public hospitals, sanatoria, infirmaries and ambulance relief stations; it should, moreover, have authority to extend the hospital system as rapidly as means are granted for that purpose. The Commissioner of Health should be made a member of the proposed board of trustees, which should appoint a committee of three from its own membership to supervise the hospitals for contagious diseases, with the Commissioner of Health as chairman ex-officio of the committee. The police power of the Board of Health and its authority over contagious diseases should not be impaired by whatever new law may be enacted to meet the recommendations. Complications were discernible with the Department of Public Charities, but it was believed that ways and means could be found to remove the relatively able-bodied inmates of the Blackwell's Island and Flatbush institutions of the department to the farm colony at Richmond or some other suitable place. Blackwell's Island should make an excellent site for a hospital park when the present institutions are removed; and Randall's Island (after the removal of feeble minded and idiotic patients are removed to a new state institution at Thiells, in Rockland County) there should be a site for a hospital for children that would meet every requirement. It is recommended to extend the sanatorium at Otisville; to erect new buildings at Blackwell's Island; to complete soon the Sea View Hospital on Staten Island; to extend more rapidly the public hospital system of the city; to extend the general facilities of the City Hospital; to expedite the work on the new Bellevue; to extend the facilities of the King's County Hospital at Flatbush; to erect new district hospitals in Brooklyn; the early construction of public hospitals in Queens and Richmond; to use the property of the city for the building of new ambulance relief stations wherever required. The report favors the direction and control of the general ambulance service in each borough by a bureau; the ownership by the city of ambulances, horses and all the apparatus needed; that the bureau be empowered to district the city and to have further powers for complete control of the service. Pro-

posed rules are: That the patient be transported to the hospital to which the ambulance may be attached, except in emergency cases, when another hospital having provision for the care of such patients is nearer at hand. He is then to be carried to such hospital. Should the patient desire to be removed to his own home that course may be followed, in the discretion of the person having charge of the ambulance. The organization of a special service for the transfer of patients from one hospital to another and for the carrying of non-emergent cases from private residence to hospital is recommended. Upon this service should be imposed the duty of calling for any patient immediately upon the request of a hospital and of transporting him to such other hospital as may be designated or to the hospital making the call, as the case may be.

High-Frequency Electricity in the Treatment of Cardiac Affections.—H. D. Arnold (Bost. Med. & Surg. Jour., Aug. 20, 1908) finds that such currents may be so applied as to reduce the blood pressure in almost all cases; the amount of the reduction is greater in proportion to the abnormal height of the pressure, although in Arnold's series of cases none have been above 200 mm. The greatest fall in the abnormal blood-pressure was 40 mm., the average fall was 17 mm. after an average treatment of twelve minutes. There is good reason to believe that there is also a favorable effect on metabolism and that in this way the conditions that cause the high pressure are improved. For this reason the effect of treatment is not merely temporary; but lasts for a long time. This form of treatment will be of special value in cardiac cases where the heart is having difficulty in overcoming high blood pressure, especially where the pressure is due to faulty metabolism or poor elimination; in this class are included cardiorenal cases. It will also be useful as an adjunct in the treatment of those cases of high pressure which have not yet developed cardiorenal disease, which are due in part to our strenuous modern competitive life and our excessive food ingestion.

The Plague in the Punjab.—Up to 1904, states the official sanitary report for 1907, the highest mortality from plague in that province was 197 per 1,000. In 1907 the deaths were 608,655 or 30.3 per thousand. This means that during the last six years the population has been almost decimated by plague, the total deaths for that time amounting to more than 1,800,000. The mortality was far higher in country places than in the cities, and lower in large towns than in those that are smaller. Again, in the five years before 1907 the female death rate from plague was 39 per cent. larger than the male death rate; in 1907, however, this great disparity disappeared, and the authorities are at a loss for an explanation. The plague moreover appears more fatal to persons in the prime of life than to infants or old people. The plague appears to depend upon climatic conditions; it disappears in high temperatures and returns when the temperature is more moderate. How does the bacillus pestes maintain itself in the interval? Probably the rat supplies the missing link.

Pyopericardium in Children.—F. J. Poynton (Brit. Med. Jour., Aug. 15, 1908), finds that this lesion may

occur in a general pyemia consequent upon a local infection, and complicating such lesions as suppurative otitis media, osteomyelitis or septic wounds. In such cases septic abscesses may be found throughout the body. Pericarditis is most serious in these circumstances. In children under twelve pyopericardium is almost invariably associated with pulmonary disease, which is most commonly of pneumococcal origin. Males and females are equally affected; 83 per cent. occur before the fourth year, 66 per cent. between the first and third year. Primary pyopericardium is very rare. The diagnosis is very difficult. The early age of the patient is a difficulty. There is usually absence of pericardial friction; the poisons leading to this lesion have a more peptonized or digestive power than the rheumatic, so that the exudations are soften and more creamy in consistence and less harsh, so that friction is much less frequent. There are the complicating signs of such severe pulmonary disease as pneumonia, pleurisy and empyema. There is finally the absence of endocarditis. There are three kinds of cases. The acute (which make up 20 per cent.), running a course of four weeks; the subacute (50 per cent. of the cases) lasting from one to six months; the chronic (17 per cent. of the cases) with insidious onset and lasting from six months to over a year. The more important signs are: progressive muffling of the heart sounds synchronous with enlargement of the cardiac area, together with marked dullness over the pericardium and sometimes posteriorly in the interscapular region. Tubular breathing or absent breath sounds may also be noted in the interscapular region; a rapid and extensive increase of the cardiac dullness upwards toward the left clavicle; the pear-shaped outline of a distended pericardium; abrupt transition from the dullness of fluid to resonant lung tissue, a wavy and diffuse pulsation to the left of the sternum. The most common error in diagnosis is to take part for the whole truth—stopping short at pneumonia or empyema. Pyopericardium may be diagnosed as tuberculosis. The prognosis is very grave; unless a specific serum be obtained treatment will not greatly avail. Surgery offers the best chances at present.

The von Pirquet and Calmette Reactions.—R. Bing (Berl. Klin. Woch., March 16, '08), has records of 241 children in whom the von Pirquet test was applied. Of the 19 among these who were undoubtedly tuberculous, 14 gave a positive and 5 a negative result—a positive result of 73.7 per cent. of the undoubtedly tuberculous cases. Among 36 children who were regarded as suspicious of tuberculosis 69 per cent. gave a positive reaction. Among 186 children not tuberculous 34 gave a positive reaction (or 18.2 per cent.). The five negative cases of the first group included 4 cases of tuberculous meningitis and one of miliary tuberculosis. Von Pirquet has pointed out that the reaction may prove negative in advanced cases of tubercular disease. However, among the positive cases Bing 2 advanced cases of tubercular meningitis and 2 of miliary tuberculosis. In comparing the number of children who reacted to the von Pirquet (the cutaneous) application of tuberculin, according to their ages, the frequency appeared

to increase steadily from 19.3 per cent. in the first year of life, to 56.2 per cent. between the ages of 12 and 14. In all the fatal cases in which a positive reaction was obtained the autopsy confirmed the diagnosis of tuberculosis. The last 100 cases were further controlled by the ophthalmo-reaction to tuberculin, Calmette's original 1 per cent. and 1.5 per cent. solutions being employed. The six cases of undoubted tuberculosis yielded 50 per cent. of positive and 50 per cent. of negative reactions; 15 suspicious cases showed 40 per cent. of positive against 60 per cent. of the negative results; whilst among the 79 not tuberculous cases, only one gave a positive reaction and all the others (98.8 per cent.) gave negative reactions. Among the undoubted tuberculous cases only one showed a difference between the two reactions; this was a case of tubercular meningitis, and gave a positive reaction with von Pirquet and a negative with Calmette. Much more marked differences were noted in the second group. Bing concludes that von Pirquet's reaction reveals every tuberculous focus in the body, save the very advanced ones; whilst the Calmette shows only those which are active and not advanced. Bing further found (contrary to Cohn's experience) that none of the cases of enteric fever gave a conjunctival reaction; he believes the cutaneous reaction to be quite safe, which cannot be said of the ophthalmo-reaction.

Expectation Neurosis.—Isserlin (Munch. Mediz. Wochenschr., July 7, '08), reports several cases of the Erwartungsneurose described by Kraepelin in 1904. The expectation of an occurrence induces gradually increasing inner tension, which shows itself sometimes in certain false impressions, sometimes in all kinds of impulses to movement. If the anticipated occurrence is unpleasant the anticipations may be painful and annoying. Reading is the function most frequently interfered with by this form of neurosis; and the reading may be made impossible by flickering, sensations of tension; photophobia and pain. Other functions which may be affected are writing, walking, standing, sleeping, swallowing and the sexual and urinary functions.

Baths Before Books.—Dr. W. H. Maxwell, N. Y. City Superintendent of Schools, recently declared that the usefulness to the city in point of morality of the Carnegie public libraries was small compared with that which would accrue from a comprehensive system of public baths. He knows of no better way to promote the physical and moral welfare of the rising generation, their health, cleanliness and comfort "than by placing, say \$250,000, at the disposal of the Board of Education for the construction of shower baths in all our school buildings in the poorer neighborhoods." Will journals of philanthropy please copy?

Ambidexterity is a fad, declared recently Sir James Crichton Browne, in criticising a movement recently initiated by the Headmaster of Eton. Ambidexterity on a large scale is impossible and undesirable. It is by the superior need of his right hand that man has gained his victory; to try to undue his dextral pre-eminence is simply to fly in the face of evolution. At Eton ambidexterity was being inculcated by an

ordinance that all boys who for their transgressions were called upon to write "lines" should henceforth do so with the left hand. A boy who had to do this explained to Sir James: "It's quite simple; we take the pen in the fingers of the left hand and we work them with the right." Right and lefthandedness is dependent upon cerebral organization and nothing else; it is, declared Sir James, common only among idiots; to endeavor to insure its general cultivation would mean the enlargement of the already overgrown lunatic asylums.

Surgery Five Thousand Years B. C.—The Royal College of Surgeons and Physicians in London has received as a gift for its museum a collection of pathological specimens from Upper Egypt. Some months ago several cemeteries were discovered, apparently many centuries old, and the skeletons were found to be so perfectly preserved by reason of the careful burial as well as of the peculiar climate that it was quite possible to observe what means had been used for setting broken bones, and what bone diseases were most common. Nearly 400 specimens gave proof of a very thorough knowledge of several principles in use to-day. There are examples of splints used for fracture of the bones of the forearm. The specimens are considered to be the oldest in existence.

Poor Material for the British Army.—The Pall Mall Gazette observes that if there be any doubt that physical deterioration in the submerged classes is more serious than it used to be, the "report of the Army Medical Department pins one down between that opinion and the conclusion that the army is recruited from a lower social stratum." Average British recruits are not only the youngest but in the poorest physical condition of those in any civilized army. They cannot stand work which did not injure well-fed conscripts of twenty years ago; still less can they face exercises which would do harm to robust men. They are from want of food and from the cigarette habit such miserable specimens of humanity that it takes two years to make men of them. A British army is painfully produced from the army of the British unemployed; as many as 95 per cent. of accepted recruits are hopeless "out of works." "There is a good deal amiss," declares the Gazette, "with the conditions that make these degenerates, and the report gives one to think furiously; but the larger question raised by it is whether any amount of training and selection can produce an efficient army out of such material."

The Management of Epidemics.—S. Alexander (Berl. Klin. Woch., July 20, 1908), finds a well-organized board of health an important aid in the prevention and stamping out of epidemics; all branches of the public board of health must get prepared in times when there are no epidemics (except those which suddenly appear) and must be entrusted with the incidental problems; during the prevalence of epidemics the preparations of the health board must be kept in constant readiness and in touch with the measures adopted for their control; for the performance of its tasks during the prevalence of an epidemic it would be well for the official board of health to be associated with a medical board.

Guaranteed Oysters.—A new section of the sanitary code provides that oysters fattened in polluted waters cannot be sold in the metropolis, a direct trip of the oyster from ocean to market being demanded. Every person who sells oysters in New York City must have a written permit from the Board of Health; the applicants are required to give the names of the growers from whom they buy their stock, and the location of the beds. The permits are revocable on proof that a dealer is selling "drunked" oysters—such as have been fattened in polluted waters. During the summer past Health Department officials have inspected all the oyster beds from New York to New Haven and down the Jersey coast as far as Manasquan; and in consequence New Yorkers are assured that they may consume the city's supply without the slightest fear of eating contaminated oysters.

Demoid Tumors of the Abdominal Wall.—H. B. Stone (Am. Surg., August, '08), believes with Pfeiffer that these tumors are fibromata or fibrosarcomata arising from the musculoaponeurotic structures of the abdominal wall, thus excluding tumors originating from the bony pelvis, the round ligaments, the skin or the subcutaneous tissues. Such tumors may first be discovered during pregnancy or the puerperium, though they occasionally occur in males. They appear to be typical fibromata and are most frequently found in the right lower quadrant of the abdomen. A scar or organizing hematoma is usually the starting point. Seldom painful, they vary in size from a hen's egg to a fist; the growth is slow; calcification may take place; spontaneous disappearance has never been observed; the lymph glands are not involved unless the growth is malignant; The treatment is early operation. The longer these tumors remain the worse is their influence upon the surrounding structures, and the greater the tendency to malignant degeneration.

Psychotherapy.—L. F. Barker (J. A. M. A., August 1, '08), observes that the "yellow streak" in psychotherapy has prompted many physicians from utilizing to the full the good there is in it. Conservative men trained in science should work with it and publish their experience of its advantages on the one hand and of its limitations and dangers on the other. An accurate and exhaustive diagnosis should invariably precede its use. It is no universal panacea, but in certain cases it is indispensable, and in all cases it is a valuable supplement to other therapeutic means.

A Tuberculosis Canned Lecture Outfit has been arranged by the Washington authorities in pursuance of the plan of the Charities Aid Association of New York State and of the New York State Board of Health; this outfit will be used as an auxiliary in the fight against tuberculosis. Mr. Paul Bernstein is in charge. A large phonograph with a megaphone attachment is placed in an automobile; the discs carry three brief lectures on prevention and cure, and a number of musical selections. At each stop a few musical numbers are rendered, then there is a lecture upon the prevention of the great white plague; upon this there is more music followed by a lecture on the treatment and cure of the disease. The outfit is expected to tour many cities in the states of New York and New Jersey.

Chronic Diarrhoea.—S. G. Gant (N. Y. Med. Jour., August 15, '08), finds the primary cause to be generally in the colon. Drugs internally are mostly ineffective; such cases should at first be treated with colonic irrigations. Failing this after a few weeks' or months' trial, there should be operation. Colostomy should be discarded; appendicostomy is preferable, having cured all but two among 35 of Gant's cases. The appendiceal outlet was kept open from five to six months. Gant however prefers cecostomy, a new operation, with an arrangement consisting of two catheters by which both the small and the large intestine can be irrigated. When the functioning power of the gut is lost by reason of extensive ulcers or strictures, a resection of all or a part of the gut is the only satisfactory treatment.

A device to enable medical students to watch surgical operations has been installed by Dr. A. M. Lesser in the Red Cross Hospital. By its means the amphitheatre becomes unnecessary; for the student can see the minutiae of the operation from a distance of four hundred feet. The idea is based upon the reflex camera by which an object from an appreciable distance can be thrown upon a ground glass atop the camera through the use of the mirror which, standing at right angles with the centre of the lens, throws the received image upward. The same takes place only in the opposite course, in the reflex mirror of the operating room; this latter is five feet by three in size and hangs obliquely over the operating table about seven and one-half feet above the floor. It hangs transversely to the operating table, the lower part being about even with the head of the table and the upper part leaning to form with the table an angle of seventy-five degrees. The students can watch the operation from their seats, and with the additional aid of opera glasses they can see the most minute part of the field.

Seismology to the Fore.—When the British Association visited South Africa the eminent seismologist John Milne and the Cambridge pathologist Sims Woodhead took clubs and balls to the Victoria Falls on the Zambesi River. There the man of earthquakes accomplished a drive across the falls of one hundred and sixty yards—a most noble record.

Fat Men Barred as Divers.—The J. A. M. A. (Sept. 26, 1908), reports investigation of Mr. Leonard Hill showing that fat men are more liable to caisson disease than thin ones, because adipose tissue is very absorbent of the nitrogen of the air, the liberation of bubbles of which in the body produces the symptoms. The same conclusion applies to divers, or others exposed to increased atmospheric pressure. The following rules have been laid down for the royal navy by the admiralty: Only seaman divers and artificer divers who have not a tendency to fat are to be accepted, preference being given to men who are distinctly thin. Men already engaged who are inclined to fatness, but not to such an extent as in the opinion of the medical officer should disqualify them for work at the lesser depths, might continue operations in depths not exceeding 12 fathoms (72 feet); in all diving operations at 20 fathoms (120 feet) and over men of the sparest habit are to be selected.

Typhoid Fever the Text.—It is stated that on a recent Sunday all the churchgoers in West Pullman, Illinois, heard sermons based upon health for a text; this was in consequence of an appeal for assistance in stopping the rapid spread of typhoid fever sent to five hundred clergymen, doctors, druggists and citizens by Dr. W. A. Evans, the Commissioner of Health of Chicago. The clergy were appealed to to address their congregation for the purpose of arousing the people to the danger which they face and persuading them to take elementary precautions; these efforts made by Dr. Evans were by reason of the magnitude of the epidemic in the southern section of the city.

A Million Dollar Gift to the Presbyterian Hospital in New York city was made by the philanthropist, Mr. John S. Kennedy, on the occasion of his golden wedding. The money is to be used for a new Administration Building; and what is left over is to be employed to carry out other works of construction and reconstruction of which the hospital has long stood in need. It is stated that through Mr. Kennedy's generosity "two, at least, of the old-fashioned, non-fireproof Presbyterian Hospital buildings, which ever since the days of Tweed have withstood the attacks of time and weather at Madison avenue and Seventieth street will soon be torn down and replaced by more modern structures, conforming to twentieth century hospital standards and completely fireproof."

A Good Fight to Win.—Citizens who have been fighting the pollution of the waters in that part of the State about Saratoga by pulp mill and other manufacturing waste, have been much encouraged by a court decision in favor of a plaintiff in an action brought to procure an investigation restraining an offending company from polluting the Kayaderoseras Creek and to recover damages. Landowners along other of our State streams are suffering from similar conditions which are aggravated by the low water due to the drought. The water of the Au Sable River, for example, is thick and black with pulp mill refuse; the Ticonderoga River carries its polluted burden far out into Lake Champlain, where it stains the water even to the Vermont shore; and the pollution of the Saranac and Boquet rivers menaces the health of the people along its banks, so states the N. Y. Evening Post.

"Carriers of Disease" were recently discussed by Sir James Crichton Brown at a sanitary conference in Liverpool; the material dangers inherent in infested books and newspapers were dwelt upon, but their mental and moral aspects were thoroughly overhauled by him. There is now unhappily in circulation literature that quite apart from prudery or very puritanical prejudices must be pernicious to health. Mingled with the main and limpid stream are turbid currents here and there, effluents of debased and sordid minds, and loaded with putrescible material and uncanny spores. The difficulty is that we have no adequate means of separating this foul stuff and getting it into the septic tank. There are novels in demand—"hot novels, I am told they are called"—that pander to vicious tastes and excite unholy passions. There are scurrilous journalistic rags about—one sees them sometimes on the tables of the affluent of sporting proclivities—that should only be fin-

gered by decent people with the tongs while being consigned to the flames. These are public nuisances which cannot be ignored when we are taking stock of the carriers of disease, for not more surely does sewer gas produce febrile disturbance and anemia and predispose to erysipelas and gangrene than do these emanations of cesspool literature discompose and debilitate the mind and prepare the way for hysteria, moral paralysis and nerve degeneration. This kind of literature is dangerous to the public health and should be dealt with like adulterated food. Either Sir James has been coming it uncommon strong, or our cousins across the pond are in a very bad way indeed. But what has all this time that highly moral and truly British institution, the public censor, been about?

The Disappearance of Pain.—W. Bennett (Brit. Med. Jour., July 4, '08), finds that no accurate estimate of the behavior of pain is possible in the observer of a careful study of the patient's temperature; sudden or rapid disappearance of pain should never be accepted unreservedly as a sign of improvement; sudden disappearance or rapid diminution of pain, unless it be coincident with proportionate improvement in the associated symptoms, is often a sign of impending disaster, and not an indication of recovery.

Cancer of the Breast.—J. B. Bissell observes (Am. Jour. Surg., August, '08), that in the present meagre state of our knowledge concerning this malignant lesion our only hope is in the knife, used adequately, extensively and as early as possible. Unfortunately not even by this can success be assured; within its limits, however, surgery is powerful, sure and wonderfully hopeful in the end results which it produces. The surgeon can assure his cancer patients, if seen early enough, the definite certainty of a comparatively long life.

Otitis Media.—W. B. Stevens (Cal. State Jour. Med., July, '08), declares that many an infant has died from meningitis caused by unrecognized otitis media, and many a child has grown up with a discharging ear or has been handicapped by impaired hearing from the same cause. He refers to the prominent place colds and abnormal conditions of the nasopharynx play in the etiology of acute otitis media; and emphasizes the value of early paracentesis and the necessity of asepsis at the time of the incision and in the subsequent treatment of the ear.

A Public School for the Deaf and Dumb.—The first municipal school of this kind was opened in September last. There are twenty-five classes, open to pupils thus afflicted in all the boroughs. There is to be a three-year course, at the end of which time the pupils may be able to enter the regular classes and in spite of their physical handicap, to benefit by the general instruction. Only lip reading is to be taught; the old and inferior method of reading by signs is to be dispensed with.

Congenital Elephantiasis.—C. T. Noggerath (Berl. Klin. Wochenschr., July 6, '08), considers that he has found a true case, corresponding essentially with the acquired elephantiasis of adults. The child was somewhat underweight, slightly rachitic, practically normal, having its nutrition very little interfered with, presenting, however, a micropolyadenia, a slight anemia, a splenic tumor and a cushion-like thickening of both legs and feet.

MISCELLANY

St. Petersburg is threatened with a cholera epidemic, so its Department of Health has declared officially; special efforts are making to quarantine new arrivals and to inspect foodstuffs.

A Chinese medical school is contemplated at Kirin, Manchuria; the faculty will be mustered from graduates of the medical school of Formosa. The Physician and Surgeon well observes that this news, emanating from the Celestial Empire, is truly encouraging and inspires confidence that the spirit of progress is working in China.

A new National Hospital is to be erected upon the site of the Hospital de Alfonso XIII, which was built in 1895 on the heights of Principe Castle, just outside of Havana. It is to be a two-story building; it is stated that grants from the Cuban Congress and from the United States will make available a fund of one million dollars for building and equipments.

Robert Inglis, the athlete whose home was in Yonkers, New York, and whose heart structure was deeply cut, died nineteen days after the operation. The sutures in the heart muscle had entirely closed; for several days his condition had been very favorable, and he might have recovered had not sepsis supervened. The cartilage of the fourth rib was also severed.

Pouring molten lead into his right ear was the means of attempted suicide recently employed by a tinsmith in Middletown, New York. He was found unconscious on the floor of his shop. The metal had permeated some of the mastoid cells; nevertheless the ingenious patient rallied and partially recovered his health. After four and a half months, however, he succumbed to blood poisoning.

Burns.—L. Renner (*Zentralb. f. Chir.*, July 25, 1908), applies a dressing (whatever the degree of the burn) of one part bismuth subnitrate and two parts of kaolin. The affected area is first thoroughly cleaned, then thickly powdered and bandaged with sterile gauze. There is secured by this treatment thorough drying of the area and absence of infection, whilst the formation of bullae is rare.

Dr. L. L. Seaman, who has returned from a further study of the medical division of the Japanese army, thinks that the medical department of our own is too much limited in latitude to reach its greatest efficiency. "The medical men in our army must have more authority than a clerk;" they should not command troops "but they should be allowed the power to make men fit to command and to be commanded."

Erysipelas and Rabies.—A Newark, N. J., patient recently puzzled the physicians at St. James' Hospital. He had been bitten by a mad dog several years ago; soon afterward he developed epileptic fits, the diagnosis of which was obscured by accompanying symptoms of hydrophobia, evidently of psychic origin. The case proved to be one of epilepsy, not of rabies.

Uterine Cancer.—J. L. Faure (*Presse Medic.*, May 16, '08) finds, contrary to the general belief, that this is one of the most curable forms of cancer, if operation is done early and in the right way. Twelve

women operated on by him have now been cured during four or more years. We should firmly contradict the idea (so Faure maintains) that this disease cannot be cured; the public should be warned so that cases will the earlier be seen.

Mercury for Tuberculosis.—Medical Inspector C. T. Hibbett, of the navy, has transmitted to the Navy Department a paper by Surgeon B. L. Wright on the treatment of tuberculosis by mercury at the Navy Hospital, New Fort Lyon, Colorado. He is almost convinced that this mineral, judiciously used, is a specific in all forms of tuberculosis.

No doubt mercury has been efficacious; but much further trial would be essential to demonstrate beyond peradventure that Dr. Hibbett's observation can be fully justified.

A Formaldehyde Room has been placed in his home in Memphis, Tenn., by Dr. E. M. Holder; here he purposes to disinfect his clothing, after seeing cases of contagion, before entering the remainder of his house, in order that he may not endanger the members of his family. Among other appliances with which this wise colleague has fitted up his home are a private safe, locks and shelves in the pantry, a plate warmer for the kitchen, a shower bath with solid stone walls, and a screened sleeping room for the summertime.

Sciatica from Lemonade.—The experience is reported of Dr. F. Koren, of Christiania, who on three occasions had a very severe, acute attack of sciatica compelling him to remain in bed for a day, after drinking a glass of lemonade; almost at once after prinking his "lemon squash." His wife's aunt also suffers severe lumbago for several days every time she drinks lemonade. Under salicylates and local heat the neuralgia vanished by the second day. We have heard of gentlemen having symptoms on occasions of indisposition suffered by the wife—but the wife's aunt!

A Typhoid Bacillus Carrier has been discovered by the officers of the Public Health and Marine Hospital Service appointed to investigate the serious typhoid fever epidemic in Georgetown, near Washington. Twenty-six cases of the disease occurring between October 8 and 15 were traced to milk from a single dairy farm. After an exhaustive examination it was found that the typhoid bacillus found in the milk came from a woman employed on the farm as a milker. She had not had typhoid for eighteen years (so it is stated), but had since that time been known among physicians as a typhoid carrier.

Turpentine is found effective by E. Smith (*Brit. Med. Jour.*, May 23, '08), for young infants bottle fed and even also breast fed who suffer from flatulence and colic, such as may possibly occasion convulsions; in such cases minute doses of turpentine together with a few drops of castor oil are given. The kidney and the bowels are both affected. One minim of the rectified oil is rubbed up with 3 minims of castor oil and 2 grains of gum tragacanth and the whole made up to a teaspoonful with water for an infant of eight months, is given every four hours. We may disguise this dose by adding to it 5i of the liquid extract of liquorice, 5 drops of the oil of cloves and 20 drops of spirits of chloroform. If the paroxysms of colic are severe codein gr. 1-30 may be added.

EXPERT MEDICAL TESTIMONY.

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EXPERT testimony of whatsoever nature is no more conclusive to a jury than the testimony of witnesses as to fact, and no matter how learnedly an expert may descant upon a technical point the jury has a perfect right to accept or reject any or all of the evidence given by such a witness. However, judges will, as a rule, instruct juries that expert evidence, if from a high source and if delivered without bias and with proper caution, must be given due weight.

Since there is a general lack of understanding as to what expert testimony is, it becomes necessary to make this point clear.

There are two kinds of witnesses who appear in trials. One, the witness as to fact; the other, the opinion or expert witness.

Now a witness as to fact is one who sees, hears, or knows either actual facts connected with the case at issue or facts from which legal inferences applicable to the case may be drawn. This witness whether ignorant or learned, poor or rich, young or old, must give evidence, when called upon, and should he refuse to answer questions which the court rules proper to be answered is liable to punishment for contempt of court.

The opinion or expert witness is one who through special study or experience is particularly instructed in some art or trade and may give his opinion on questions of science or skill relating to such art or trade.

While the present paper is to confine itself to the medical expert or opinion witness, still the above definition applies to all experts. To make this matter absolutely clear, let us take an example:

A doctor sees, for instance, a man thrown down and mutilated by a passing vehicle. His name is taken by the police officer and in due course of time he is summoned as an ordinary witness and is examined as to what he saw and heard at the time of the accident. During the course of this examination the question as to the sanity of the plaintiff is brought up, and the attorney directs his questions to obtain evidence concerning the nature, causes and effects of insanity; immediately upon so doing he changes the witness as to opinion, and makes him an expert.

In view of the fact that being a doctor and having made an especial study of physic he becomes one who may justly express expert opinion, there creeps in a danger, for by the Common Law of England, and by its modifications throughout these United States, the expert witness has an intrinsic right to expect or demand compensation for the expression of his opinion in open court, since that opinion must be regarded in the light of property which must be paid for just as the merchant is paid for his wares or the farmer for his crops.

I have used the word "danger" advisedly, for when a man stipulates for payment for services rendered in the expression of his opinion, and where he finds himself constantly discussing the aspects of only one side of a case, unless he be of unusually fine

balance, he is liable to become biased. Attorneys being fully aware of this human fact, when they employ medical men demand an element of partisanship, without which they are unwilling to pay fees, and from this beginning there is evolved that hideous absurdity, that laughing stock of juries and the public, known as the professional witness, who with skill and cunning so delivers his evidence that he creates unreasonable and improper doubts in the minds of the judges and juries and prolongs litigation in cases which from every moral point of view should be adjudicated promptly and finally.

We have recently witnessed this pitiable state of affairs in that notorious and unsavory cause popularly known as the Thaw case. A murder was committed; the district attorney of this great city almost immediately became convinced that the murderer was insane. Time went on and the defense, when the trial arrived, was most general and broad in its scope. The unwritten law, insanity, emotional insanity, in fact everything that could be conjured up was included under the title of defense.

As the trial proceeded and the legal battle was waged the district attorney put forth all his efforts to prove that the man whom he thought insane was sane and should be electrocuted. Suddenly one day when he evidently felt that he was losing his legal battle, he stood up and with quivering voice and eyes suffused with tears appealed to the conscience of the court, practically stating that it was an outrage to try the miserable insane creature at the bar. The Court appointed a commission whose duty it was to ascertain whether the defendant was competent to confer with counsel, and after an investigation lasting days they brought in a report to the effect that he was so able to confer.

Through some wonderful mental operation we next see the district attorney appealing with bitter invective for a verdict of "guilty in the first degree." It all ended in a disagreement of the jury.

Now how was this brought about? Simply by three things.

1. The hopeless lack of consensus between the medical and legal definition of insanity.
2. The great willingness of experts to stretch their consciences to the breaking point and lend themselves as witnesses in legal fence, a practice which is becoming more and more frequent and which has led to those following it suffering seriously in the estimation of the attorneys who employ them, the judges, their professional brethren, and the public at large.
3. The fixed desire on the part of the lawyers to air themselves in legal fence before a long suffering court. This to my mind is one of the weakest spots in the makeup of those practising at the bar, for it always weakens the case for their client and tires all concerned in the trial, since in nine cases out of ten the practice has for its object only advertising and personal aggrandizement.

Let us follow further for a moment the first of these conditions, since it is one of the greatest importance. It would take volumes to go into a discussion of the subject of insanity in all its medico-legal aspects, but it may be said that in trials where the question of soundness of mind is the issue, a

complicated condition of affairs generally results, and while the jurors are the final judges, the physician is always called in to aid them by the expression of his opinion and by giving them the benefit of his experience and study.

The reason for these complications is not far to seek, since the viewpoint of law and medicine is entirely and irrevocably different. No well balanced medical man would attempt to unqualifiedly define insanity. The very definition that it is a disease of the mind naturally leads to the question, what is the mind? And even such an authority as Herbert Spencer frankly stated that he did not know.

In order to be able to definitely state the nature of insanity it would be first necessary to define the meaning of the word sane. This is practically impossible, since it is a conventional and approximate term applied by use and custom to a class of individuals who think and act in a certain way regarding themselves and toward society at large. While a distinct departure from this standard would easily be established as insane.

Who would venture to draw a distinct line between sanity and insanity, or between eccentricity and insanity? We can all say, this is day or this is night; who can say where day ends and night begins? There is a twilight which is neither day nor night, but in part both, which cannot be described or defined. Often times so it is with the change from sanity to insanity. Hence there can be no such thing as an absolute definition of insanity. Each case must be taken and studied as a separate entity, and frequently the most careful study leaves the physician in doubt.

On the other hand, it would seem necessary to have a legal definition of insanity since the insane cannot be held responsible for their acts and since insanity is only too frequently used as a plea in the defense of prisoners who have committed criminal acts. Out of the multitudinal efforts to reach a satisfactory understanding, there have been evolved the following postulates:

(a) A sane individual can distinguish between "right" and "wrong" in the concrete case; (b) he is possessed of will power adequate to control his impulses and to control them in the light of that knowledge of right and wrong. The law presumes a man to be sane according to this standard.

From these postulates the law has constructed a definition of insanity which holds good in most states, and which is as follows:

A man or woman is insane who does not know the difference between right and wrong in regard to any specific particular act. The question must be relative to the particular act done, and the accused's knowledge of the situation in which he did it. Did he know it was wrong at that moment? Was he impressed with the consciousness of guilt and the fear of punishment? If he did not he was insane according to the law.

It is easy to see from what has been written that no physician could possibly agree with this legal definition of insanity and that were it applied to a large proportion of the inmates of our State asylums, they must be held to be sane. For instance, witness the insane patient who knows that it is wrong and against the laws of the institution to se-

crete a knife about his person, and who knows that he will be punished if he does it, and who still with the greatest cunning and forethought plans his act to escape detection of the officials of the hospital and steals and secretes a knife for the purpose of killing some person against whom he has an enmity. Here the individual has a distinct knowledge as to the difference between right and wrong, but the very knowledge itself is insane knowledge, which the law evidently does not recognize and which of a necessity can only be differentiated from sane knowledge by the most prolonged and careful study of the individual, never by the mere answering of cleverly constructed hypothetical questions in open court.

With a view of further demonstrating the danger of expert testimony as now introduced, we cannot do better than to take the above mentioned Thaw case as our text and trace it a little further.

After the disagreement of the jury in the first trial, the second was conducted with the object of not proving the patient too insane and thus insuring him his liberty. Lawyers were changed, preparations were made, and the same learned experts employed, and a straight defense of insanity was urged—this time with success. Care was taken by the lawyers and experts to diligently search for some form of insanity which would fit the case, but which at the same time was curable in its nature.

In the meantime the very human district attorney, through force of habit had lost his bearings and by continually conning over the case at issue had drifted into a partisanship which by some has been considered somewhat vindictive.

Now the question is, and no doubt will be for some time, has the prisoner recovered from the "brain storm" which caused him to take the life of the murdered man. In this final battle we may anticipate some remarkable developments in the expert testimony to be given. Current medical literature and thought will be gone over with a fine comb, meanings will be stretched, definitions changed, and large fees paid.

Suppose the murdered man had had no status in the community worthy of note, and his slayer was poor and unknown, would the result have been the same? I take it that no thinking person so believes. And it is my further belief that many and many a poor unfortunate, quite as insane as Thaw, has been sent to his doom by lack of funds to employ high-priced professional experts in the trial of his case.

At the beginning of this paper I stated that judges will as a rule instruct juries that evidence is from a high source and if delivered without bias and with proper caution must be given due weight. Personally I beg to say that medical expert testimony as now introduced cannot in the very large majority of cases be of value and for the following reasons:

There are very few men who when employed in the interest of an individual or a corporation can resist the tendency towards bias, bias of which they themselves may not be cognizant, and I have actually seen many cases where such witnesses have sworn to things to which in their calmer moments, when free from influence, they could not have given their support. Moreover it is laughable to hear the flat contradictions which occur when medical experts

are put upon the stand by contesting parties, and it leads the intelligent mind to form a very poor opinion of the profession. Certainly were I on a jury which had to consider such evidence I should give it little or no weight.

There is still another point. According to the law the mere fact of being a doctor is sufficient ground to establish a man as a medical expert witness and it can be easily seen how a more or less ignorant man, by virtue of having compiled a work of excerpts from current literature, or who has received a political appointment to some State institution for the insane, and who is further blessed with a glib tongue and a positive and convincing manner, can cause a jury to practically throw out the opinion and evidence of some weighty authority who is not blessed with that ability so valuable in the professional expert, i. e., to express himself with force, clearness and positiveness, and who further shuns political appointment and unnecessary writing as being unscientific and undignified.

Can anything be done to alter the iniquitous condition of affairs which now exists in regard to the subject matter of this paper? I think an affirmative answer can easily and positively be given, and that by the bar associations in the various states taking the matter up, laws could be formulated which would free us from the perpetration of the farce of expert testimony as it is now used. This form of testimony could be made of the greatest value in curtailing unnecessary litigation and forwarding justice were it properly used. Two feasible plans present themselves.

1. Let the attorneys on each side select two experts and let the four thus chosen agree upon a fifth. These five men could, after careful deliberation and without bias or prejudice, bring in a full and useful report of any technical point placed before them. Or,

2. Let the matter be left entirely in the hands of the Court, who could call one or a dozen experts to elucidate with absolute freedom from bias any technical point which might arise in the trial. I incline strongly to favor the Court having control since it would entirely eliminate the possibilities of partisanship, provided always that the Court is what it should be, learned, dignified and absolutely impersonal.

Under this rule the very best men in the ranks of the medical profession would always be ready and glad to give their services, instead of shunning the courts on account of the false position in which they are so frequently placed by the warring attorneys. We all know that there are many physicians and surgeons who through association with railroads, mills, insurance companies, institutions, etc., who become practically professional witnesses and who are cool, self-possessed while on the witness stand, while most men of purely scientific attainment and studious habit regard court experience with a feeling of dread born of the insulting attitude of most attorneys towards our profession while in court.

Lawyers may urge that this plan might work to the detriment of their clients and jeopardize their rights before the court on the ground that it is their sworn duty to introduce any and all evidence which in any way could be used to advance the successful

outcome of their efforts. But my plan does not, I think, preclude the possibility of further professional opinion where they felt that those called by the court had not thoroughly covered the case. And any attorney who is thoroughly desirous of getting justice in his case will be safe in the conviction that this practice will bring it about. The more power vested in the judiciary office the more easily will the man sink his own personality and rise to a fuller appreciation of the grave, dignified and honorable position which the people have called on him to occupy, and the confidence placed in him will be a sacred and inviolable trust which nothing would cause him for a moment to forget. He will be a judge in the fullest sense of the term.

While penning the last words of this paper a new case has arisen in which insanity will evidently be the plea. What will be the result I wonder?

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WASHINGTON INTERNATIONAL TUBERCULOSIS CONGRESS.

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IF within the lessening span of our working days on earth, we hope to revise our unavailable past study of consumption—tuberculosis—that stealthy and nearly unresisted scourge which has blighted the human family everywhere since the children of Israel traversed the wilderness of affliction and abode in smoky tents of unsanitary sorrows till the original multitude who were seekers of the promised land had literally all died by the way—it is squarely up to us now whether or not we rally with the present active crusaders against consumption as the most aggressive foe to human life in the world.

The hour is opportune for realizing the need and value of more intelligent scrutiny and analysis of the environment of every home, every business and work place, every school room and resort where crowd-air prevails, in order to more effectively guard the normal health of population. We face the appealing fact that an international tuberculosis congress recently assembled at our American centre of national government. That its learned representatives were earnest observers and reasoners from more than forty other countries besides our own. That the sole burden of discussion bore upon the complex problem of consumption and the most available modes for its repression or arrest. That if we individually nurse the sloth of phlegmatic apathy in regard to the mercy and necessity of this vital reform for the betterment of human existence, we inconsiderately leave to others the performance of our share of the common duty that scientific medicine always owes to the healing cause. And that if in but modest local niche, we each and all may serve as helpful adjuncts to the world's master builders of thought and doers of progressive deeds. The world has reached an era that demands hustlers and push—and if doctors cannot cure consumption by their old long-tried methods, then it is up to us to jump to the front with preventive methods, keep wide-awake the educated incentives to sanitary vigilance, until self-defense against physical degeneration becomes

the organic status of human nature, when tubercular development in population will be known as an acquired instead of a hereditary condition, and therefore is made to dwindle more and more as the subtle defacer of earthly hope and promise. It has for twenty years been my personal belief that the multitude of disordered conditions, which we habitually denominate as expressions of that number of diseases, are at base but the varying manifestations of quite the same unit of physical defection of nutrition and denutrition, namely imperfect elimination of waste matters of the body. This, radically, because of breathing bad air and the consequent unregenerated condition of the blood cells which must feed all organs of the body. This, radically, because of breathing bad air and the consequent unregenerated condition of the blood cells which must feed all organs of the body—whether fitted or unfitted for that purpose. The uric acid form of degeneration maintains a great variety of physical discomforts. The tubercular form of degeneration constitutes the other predominating plane of diseased conditions, call them by what names we choose. Then what? Sanitary breathing air, nutritious diet, to feed the blood supply for building, and ample elimination of worn-out material are in themselves curative alike in every form of diseased manifestation. What is breathed mainly determines what type of disease will be sooner or later developed. That is an eternal law of God's truth from which there can be no deviation.

The ignorant miseducated public, half the doctors also for that matter, habitually mumble their chants about "a cold"—yet "a cold!" whereas "a cold" had no more to do with the cases than a firefly has to do with a destructive conflagration. Unity of cause—unity of results. Professor Pannwitz, of Berlin, trusted counselor of Emperor of Germany, declares that so common is tuberculosis the sapper of vitality in general diseases, that every third death during the working period of life is caused by tuberculosis. Also that every other workman who becomes incapacitated must ascribe his condition to tuberculosis. And further "that to eradicate tuberculosis, a knowledge of its relations to conditions of life and to social processes should become the common property of all the people of the earth." Educate! Educate! Starting in the family—in the nursery—the school and in civil life! "Especially this sanitary training must center in the education of women, young women, training for the duties of wife and mother of children. How the dwelling shall be kept clean, the family intelligently fed, the children cared for as above the frivolities of social ideas. That it is a loss to the world when girls are permitted to enter the factory as soon as they have reached the legal age, instead of familiarizing themselves with the principles of sanitary housekeeping, either in the parental, or in some other well-managed household. Every kind of education should begin in childhood. If a man can look upon the suffering of the people and of little children without feelings of compassion, he should begin a fight against himself—he is an enemy of the people, an enemy of social life!" We have here some valuable food for reflection.

The world's Tuberculosis Congress convened at Washington under auspices of immense interest. At the opening mass meeting President Roosevelt was

represented by Secretary of the Treasury Cortelyou. Every federal department of the United States government was officially represented to add encouraging words of welcome to the hundreds of distinguished delegates. Surgeon General Sternberg, of the U. S. Army, was introduced as the man who had done prodigious work in rousing the federal government to realization of its responsibilities in the crusade for repressing the ravages of consumption. His impressive theme was forcefully presented. He showed that while mortality of various other plagues has been greatly reduced during the past century, the great white plague, consumption, yet claims its victims by tens of thousands annually in all the countries of the world. In the United States the number of deaths from consumption every year exceeds the number of soldiers of the Union armies who died from wounds received in battle during the entire period of the Civil War. In the city of Washington our annual mortality from tuberculosis exceeds the number of those who died from battle wounds during the Spanish-American war. It is between 700 and 800. The annual mortality from consumption is estimated to be not less than 200,000. This exceeds the total mortality from yellow fever in the United States for a period of 100 years. Continuing, Surgeon General Sternberg said the apathy of the past was founded upon ignorance. The recent advance for the cure and prevention of tuberculosis is based upon exact knowledge and will no doubt result in a rapid decrease in the mortality from this disease and tend directly to its practical extinction. This hope is justified by results already attained in this country and in Europe—the work now greatly aided by the exact knowledge revealed by the remarkable collection of exhibits showing tuberculous conditions of the organism prior to death."

Dr. Gustav Beyer, in formally declaring the exhibit of tuberculous specimen was open for study as a potent means of education, said that the present exposition was the finest, most comprehensive example of tuberculosis products ever placed on public inspection. That there was not a phase in the whole struggle against consumption that would not be found represented somewhere among the exhibits. Even a casual glance at this exhibition from the different countries will prove how universal is the contest, how deepened the interest, and what powerful life the great movement against consumption has reached among enlightened governments. Of the 222 collective contributors, those from the United States number 170; those from Europe and from parts of America outside of the United States, 52. Our own states have succeeded in rendering the present advanced situation remarkably clear to every man and woman. Of the exhibits from abroad, none excite more deserved appreciation than do those from Germany under attention of Dr. Hamel, of the Imperial Board of Health."

After its introductory meeting, the congress divided into seven grand sections, each for the discussion of special phases of the monster vital problem of the age. Approximately 600 original papers prepared to be read at the congress, were divided between these sections. Hence seven branches of the congress were in active operation at the same time.

I can glance briefly only at a few of the more interesting general topics. The reports on researches by the committee appointed at the last congress, three years ago, were heard with intense interest. Investigators who have sought in laboratories, hospitals and dissecting rooms such facts of tuberculosis as can help to solve the secret course of depredations in the disease and why medicines have proved of so little avail, naturally held the foot-light stage of practical concern. There were Koch, Berckman, a score of other comrades on the still hunt for germicide poachers on humanity who were listened to breathlessly, disagreed with rationally, and in time will be relegated to a niche left by the wayside of pathological simplicity and truth. It is our province to analyze the ideas of great men, not to follow them if inconsistent with natural reason provable beyond the inferences of even plausible theory. The inferential contest between the doctrine of Koch, that the source of tuberculosis virtually arises from inhalation of dried tubercle bacilli, and the opposite opinion which claims that milk and other foods carry the tubercles into the human system seems more like a stolid steeple fight of competition between the air and the earth as to which shall have the credit where the lightning strikes, whereas neither did the real damage. Neither Koch nor the food infectionists have discerned the bottom cause of consumption—their theories can never harmonize on ground-floor facts of conditions—but the corollary hygienic relief that both sides seek for is naturally destined to score an imagined victory for both. Neither side can doctor successfully for the repression of bacilli except in sanitary reinforcing the defensive capacities of the human system against passive captivity to the stealthy invader, acquired tuberculosis. Why so stealthy? Because at bottom it is an abnormally carbonized blood defection which, unregenerated hour by hour, prepares the material for the development of tubercle bacilli in the system as an auto-generated infection—in nowise essentially dependent on the incidental emigration of bacilli from outside sources. All the treatment that will ever prove reliably effective in reducing the ravages of consumption will be in proof of the natural fact just stated. These lengthy speeches go soaring around the pivotal facts, but with eyes set upon the bacilli or secondary stage of physical degeneration, are apparently blind to the logical precedent which alone installs or seats the development of tubercular conditions. However, the hygienic majesty of the total work presented by the Washington congress can only be comprehended by a study of the scope covered by each of the seven sections.

Among so many men of so many minds and ambitions there must arise a "corporal's guard" to project side-theories by which to distinguish their personality amid the overflow of tuberculosis ideas in a great congress. One of the earliest papers presented argued that tuberculosis, like typhoid fever, is disseminated through the water supply of cities and towns, and that its "germs," like those of typhoid, are to be found in other bodily excretions besides sputum. According to this doubtful "find" the elements of tuberculous debris are next to everywhere, whether we eat or drink, boiled or unboiled, and, if so, must be soaked out to nothing. It was a Phila-

delphia paper, prepared after extended research in human excretions and effusions, street offal and sewage, in which bacilli were discoverable. The inference held that surface wash in many locations carried tubercle-bearing refuse to water streams and thence to the water supply of families. We should doubt the practicability of extracting said water-soaked bacilli from the water where said-to-be-discovered "germs" were seen, and an actual tuberculosis be produced in guinea pigs by inoculation—hence harmless to the human.

Another specialty early disposed of by the congress was a paper on the value of X-rays in early diagnosis of consumption. The X-ray photo is intended to show the abnormal condition of the lungs, even before a cough has developed, also to decide whether or not tuberculosis is present, and if present to mark the degrees of improvement in the lung. This would be a refinement of observation that few eyes could be depended on for exactness of discernment. Indeed the wearied eye often sees what it so patiently seeks for—but sees it in the mind—sees much that no one else discovers! Furthermore, the X-ray machine has received a thorough test in the Phipps Institute of Philadelphia, and its use in diagnosis of incipient cases has not been attended with unvarying success.

Because it rubbed a match of contest across Dr. Koch's reputed theory that bovine and human tuberculosis are not intertransmissible, the paper by Dr. Butler, of Chicago, on the opsonic or resistance-creating effectiveness of human milk for infants won close attention. He reasoned that infants nursed by their mothers less frequently develop tuberculosis and many other infections than do children that are artificially nursed. This result, he believes, hinges on the fact that human milk is naturally free from certain protective substances found in cow's milk and other foods fed to bottle babies. This was equivalent to affirming that cow's milk favored development of tuberculosis in infants and young children. His paper impresses me as narrow and weak because of impracticable limits. There are thousands of infants, if raised at all, must be rescued from starvation by bottle feeding. There is no use in talking about wet-nurses for public service. Few of them are of correct blood anyway these days. If her breast milk is to be sanitary for the babe, the mother needs be free from debility, from disease, even from latent tuberculosis. Facts in illustration make demonstration. I carried my three sons safely through infancy fed substantially only on foods other than from their mother's breast. Her milk was thin, blue, little more than salty water. These sons now range from forty to fifty years of age, and have not thus far developed tuberculosis, though their mother died of consumption while they were yet young children. Furthermore, we have successfully carried three grandchildren through infancy altogether with bottle foods. The young mother of two of them lost her breast milk within a month after their birth. The mother of the other one survived her babe's birth but a few days, without having him even attempt the breasts. Though an extremely puny infant, he is an elegant lad to-day, nearly eleven years of age.

Among feats of the skirmish line, before the con-

gress reached its heavy work, was the inoculation of ten children, all charity patients at the Children's Hospital, with bacilli of tuberculin, both human and bovine, and with a culture of Koch's tuberculin, designed to prove the accuracy of the diagnostic methods advanced by Dr. Detre, of Budapest, Hungary, and the diagnosis theories of Dr. Von Pirquet, of Vienna. Like as our modern operators on the suspected appendix usually cover the excuse for the excision, by declaring that the operation was successful, Von Pirquet declared that the children had responded beautifully to the demonstration—the reaction being satisfactory. Sharp criticisms followed this experimental use of charity children for show, but Dr. Flick promptly rallied to the defense of the foreigners by assurances that the experiment was perfectly harmless. Dr. Detre explained that his method consists in the inoculation of the patient's arm at three different points at the same time—first with Koch's tuberculin; second with a filtrate of a broth culture of human bacillus; third with a filtrate of a broth culture of bovine bacillus. Within 24 hours will testify which type of bacilli caused reaction; whether the infection is an awakened dormant one, or of recent contraction; whether the human organism can resist the attack—in short, all the biological properties of the infected organism."

At this stage Dr. Koch, in joint session, comes actively before the congress. Theme, Relations of human and bovine tuberculosis. He commended the work of the health authorities of New York City, under direction of Dr. Biggs, in combatting tuberculosis as a model to be copied. He said two of the most noteworthy measures employed are, first, compulsory notification of tuberculosis; second, removal by force, if necessary, of such patients as are dangerous to their immediate neighbors. He hoped the example set by New York would be adopted in Germany—especially compulsory notification and the forcible removal of tuberculous patients.

Dr. Sachs, of Chicago, thinks the disease is not inherited, but acquired through close association with tuberculous parents, who are either careless in their disposal of sputum or whose home surroundings are so defective as to make infection a natural sequence. Personally I have been intimately acquainted with a family residing in the country, where neither father nor mother were tuberculous, died at old age of other diseases, but five of whose adult children died at intervals of years of consumption in the same house, and were buried in the same cemetery. The foolishly spoiled outdoor environment, the always wet cellar, the unsanitary mode of heating, the frequent mustiness of the rooms because of rancid dampness evidently molded the doom of the family.

Strenuous life in America as cause of tuberculosis was the burden of theme by Dr. George Dock, of the University of Michigan. He said that the white plague costs America annually more than one billion dollars, basing the calculation on the accepted estimate of the value of human life. Transposing his idea into words of my own, overwork and nervous strain combined with anoxia worry exhaust vitality, and reduction of vitality steals the resistive powers needed to escape the invasion of tuberculosis. To secure relief from care for cases, broadened hospital

accommodations are needed and bounteous benevolent aid for dependent families while the patient is being cared for, and his efficiency raised. And when well enough to work, the patient should be furnished with proper sanitary occupation to hold the field won. He argued properly that the tuberculosis problem is a social as well as a medical one and society must assist in solving it. Another reverse to the recent vogue of overfull feeding in tuberculosis came from Professor Fisher, of Yale University, who said that many sanatoria all over the world are beginning to realize that "stuffing" the patient is detrimental—that though such feeding might make patients look strong, it left them feeling weak. He demurred against the use of large quantities of meat. As evidence of the germ idea of infection, Calmett, of France, claimed that the bacilli are taken into the system by swallowing—while infection, by inhalation was warmly defended by Professor Tendeloo, of Holland.

But a tenacious mouth-to-mouth contention was approaching in special session of the congress. All the milk and water and meat talk must drive a hook to hang on or fall as a fabrication of fustian. Dr. Wilcox, of Cornell University, N. Y., was stocked full of the solid lead of statistics. The crusade on cattle suspected of spreading tuberculosis had been tremendously costly to cattle owners. Was this arbitrary sacrifice demanded by a few detective examiners with a license in their pockets, absolutely essential for the safety of the public? Men who draw salaries usually do something because authorized with privilege and pay. The statistics presented by Dr. Wilcox show that New York State alone suffers an economic loss from the ravages of the white plague of \$65,000,000 each year. "The loss," he said, "consists mainly of two elements; on the one hand the cost of the sickness and the loss of earnings between the beginning of the disease and the death, and on the other the loss of earning power during the working years that the patient would probably have lived had he escaped the disease. After a critical examination of the evidence the former is estimated as at least \$11,200,000 and the latter as at least \$52,250,000." But that enormous sum is not all. "The farmers of the State lost at least \$1,500,000 a year from the reduction in the value of their cattle through what is claimed to be bovine tuberculosis." Now then, if tuberculosis is not certainly conveyed to the human through bovine products, why the necessity for the slaughter of so much valuable cattle property? And the State of New York is but one Commonwealth that is subject to similar destruction of cattle. The issue hinges naturally on the authentic fact whether or not human tuberculosis is derived from bovine sources. Dr. Koch, though the reputed discoverer of the bacillus of tuberculosis, maintains that "no case of pulmonary tuberculosis in a human being has ever been demonstrated as being of bovine origin." We must note the difference between inference and the demanded demonstration. This congress, as former congresses, has been run too much on lines of inferences. But this unequivocal declaration of Dr. Koch at once drew this tuberculosis congress into face-front attitude of contest. Dr. Koch made vigorous defense of the theory expressed by him years ago, to the

effect that human and bovine tubercle bacilli are not intertransmissible as such. But allowed that a localized tuberculosis of joints or skin may be set up in a human being through infection by bovine tubercles through wounds or similar mediums." We all can understand how a sore on any animal, at cat's back, for instance, may inoculate a sore, abrasion, or wound on a child's hands from handling said animal—so Dr. Koch evidently believes that the human being may be inoculated by a bovine tuberculosis; but he maintains with emphasis that "the bacillus which causes tuberculosis in cattle is entirely distinct from that which is the cause of human consumption." He may be right in his hypothesis. He may be wrong by half. If he is right, while his opponents who believe in a tuberculosis produced by milk and beefsteak from tuberculous cattle, are busy exploiting hot air about a different quality of tuberculosis from that which Dr. Koch had under the field of his glass when he declared his discovery? Parallel disorders, one of the cattle, and one of the human, is an altogether reasonable conclusion, and that these are not essentially interchangeable. Why would cattle become infected with tuberculosis from humanity? Where else do cattle acquire their reputed tuberculosis if they have it same and similar to the corresponding disease as reported in mankind? Do the cattle that are reported to be tuberculous, and hence are doomed to death, do they present the identical symptoms that we are accustomed to see in consumption of the human? Have we seen cows coughing with little intermission, wasting to skin and bone, prostrated with sheer debility and dying for lack of adequate breath? Through the industry of extended search, it is growing evident that the bacilli depended on as diagnostic of tuberculosis abides almost wherever sought, or else human eyes are deceiving themselves. Are all these shed abroad by the human and hence by inference claimed to behave as breeders of human consumption in other humans everywhere? Too much inference—too little demonstration. We doubters who think twice before we commit ourselves to popular inconsistency, may safely defy any germist to demonstrate that a bacillus swallowed with food, if that food be digested, will go through the solvents of gastric juice unchanged and land unchanged in the glands of the organism or other parts to there set up a destructive process of its own kind which will destroy to waste the entire body. To reply that "it seems that way!" is no proof, but the convenience of inference only. We may find tadpoles (bacilli) in the puddle; the puddle may be a natural medium for propagation of tadpoles; but who in reason would claim that the tadpoles made the puddle because they are found there?

It is more easy to dissent than to refute in argument. Dr. Koch, as already stated, courageously stood by his guns in defense of his theory that the bacillus which causes tuberculosis in cattle is entirely distinct from that which is the cause of human consumption. That leaves to debate the possibility of two forms of tuberculosis—one animal, one human. Koch admits this, but doubts transmissibility from cow to human beings in form of foods. In elaborating his arguments, Koch's aim to establish an agreement was vigorously resisted by Arloing, of France, Fibiger, of Denmark; Theobald Smith, of Boston; and

Pearson, of Philadelphia. Men of ready minds enjoy debating the opposite side. These dissenters maintained that bovine tuberculosis enters the human body through infected milk and other dairy products; and the protection of the human body, particularly the bodies of infants, against this form of infection was an especial duty of the Commonwealth and its people. Dr. Dixon, state commissioner of health of Pennsylvania, joined forces in opposition to Dr. Koch's theory. Dr. Pearson, state veterinarian, proposes to enforce with rigidity the laws relating to the testing of cattle with tuberculin and the elimination of infected animals. He will press the inspection of the milk supplies of our dispensaries and sanatoria, and as much farther as the law will permit—including even water supplies of cities and towns. He proposes to quarantine water sheds and water courses against infection by tuberculosis as effectively as we shall against typhoid fever." Easier said than done. Arloing, of France, declared positively that the tubercle bacillus found in cattle is identical with that found in man, the changes being merely of form and not of substance. This is admittedly a difference already! Fibiger cited twenty-nine cases of the transmission of tubercle bacilli from man to cattle, thus controverting what Koch had said could not be done. But Fibiger did not exhibit the goods, nor bring any affidavits! Dr. Raw, of Liverpool, put in an impressive broadside declaring that a large amount of tuberculosis affecting the human body is of bovine origin, and consequently required a different line of treatment as compared with the treatment of pulmonary tuberculosis. His observations cover 5,000 cases—time, fifteen years. His conclusions have been formed from active study of clinical and pathological manifestations. He affirmed that for centuries man has been accustomed to feed upon cattle and their products, milk, butter, cheese, and in this way the human body has become tolerant to bovine tubercle bacilli. He believes that man is attacked by two distinct varieties of tubercle, one conveyed by infection from person to person, the other by receiving into the body bovine bacilli from infected food—the human body susceptible to both forms of tubercle. In the scope or variety of infection, Arloing includes pulmonary tuberculosis, ulceration of intestines, tuberculous laryngitis, while bovine tubercle bacilli produce tuberculous peritonitis, tuberculosis of lymphatic glands, ditto of joints, tuberculous meningitis, and lupus. He adds that in addition to the accepted open-air methods of treatment, he is convinced that tuberculin is a necessity to thoroughly eradicate the disease from the blood, and to produce an artificial immunity.

No less emphatic in his opposition to Koch was Dr. Dawson, of Delaware. He claimed that tuberculosis in swine is becoming more prevalent and is found in swine which are fed on dairy refuse, in those which feed after dairy cattle in the field and in those which have access to the manure pile. A tuberculous cow will infect her calf. He affirmed also that tubercle bacilli may remain alive (he should have said effective) in milk and butter for several months. Help us, has he kept milk bottled several months till it rots, to find the microbe therein and thereby generated? And we all know that old cheese be-

comes like excrement unless it has walked away by its maggots of degeneration. Dr. Dawson's milk and cheese illustration is by no means pertinent to the problem because decay naturally develops its scavenger bacilli. It is my own opinion that half of the cases supposedly developed by foods are only incidental with more natural causes, namely, degenerate blood cells through defective oxygenation.

A report from the Phipps Institute of Philadelphia drew a blue mark across the boom of the Maragliano serum. In presenting the paper Dr. Flick, head of the Institute, said: "Maragliano presented a paper under the auspices of the Phipps Institute March, 1904, in which he made the announcement that it is possible to produce a specific therapy for tuberculosis, and that it is possible to immune the animal organism against tuberculosis as is done in other infectious diseases, and there is good reason to hope for an anti-tuberculosis reaction in man. The Institute sent Dr. Ravenel to Maragliano's laboratory to study his methods. It sent Dr. Pearson to Europe to study the methods of other men in serum work. The Institute imported some of Maragliano's serum for use in the Institute, and had Dr. Ravenel make the serum according to Maragliano's method. Twenty members of the staff used the serum and reported on it. The consensus of opinion of these men was that the serum had no specific value. The cows used for making serum were tested for tuberculosis and found free from it. They were guarded against infection. They were immunized by injections with material recommended by Maragliano. One of the cows died, June, 1907, of general tuberculosis, as shown by autopsy. The other cow was killed and found to be slightly tuberculous." It may be asked what effect follows such injections of serum in the human? Dr. Landis reports that of forty-one cases treated with Maragliano's serum, seven showed evidence of marked hypersusceptibility, suffused face, oppression about the heart, rapid pulse, lumbar pain, muscular tremors, sense of impending death. There were no fatalities. The treatment included twenty-seven injections. All the cases had moderately advanced disease. Another phenomena noted were herpes labialis in one, herpetic eruption about the site of injection in three, severe inflammatory reaction at the site of the injection in seven. Adjacent lymph glands were enlarged and tender in ten. Severe joint pain occurred in three, lumbar pain in two. Four years' experiments that cost many thousands of dollars and extinguished hopes of a positive cure for the great white plague." This demonstrates what unhappy experiences unfortunate victims of tuberculosis may be put through by impracticable germ faddists who imagine that a slow, decaysome wasting disease, depending on environment and bad air for its progress, can be "cut out" by a serum inoculation like the acute twenty-day eruption of smallpox may be half aborted by vaccination. The idea in itself is wholly incongruous with active conditions and discriminating reasoning.

The special meeting, called at the instance of Dr. Koch himself, to consider his theory of the non-transmission of animal tuberculosis to the human subject, could not reach a deciding vote because Dr. Koch wisely objected to any attempt to settle any

impersonal scientific problem by the partisan voice of personal contestants. Evidently it was as much the purpose of delegates to worst Koch as it was a desire to solve the facts of truth. It was urged that the inspection of milk and the murder of suspected cattle must go on for the protection of human health. It was warmly urged that an overwhelming number of cases of tuberculosis of the skin, liver, kidneys, bones and nerves have their origin in the bacilli that come from the bodies of cattle. That the lives of uncounted thousands would be saved by effective protection of the milk supply. That hundreds of thousands of crippled children whose deformities are traceable to infected milk should be an object lesson to impress upon the world the danger that exists in the milk and butter supply of the public. The enthusiasm of the opposition to Koch revealed exasperating zeal. Dr. Noack, of Pennsylvania, declared that the uniformity of the tubercle bacillus is recognized everywhere; referred to researches by the Prussian government and cited the English commission that declared in 1907 that man and beast can infect each other. With his mind bent on the incidental bacillus, he affirms: "All measures to protect against transmission of tuberculosis from animals tend at same time to prevent the spread from animal to animal." He admits that cattle usually are very unsanitariously housed in winter through the country. I have often observed that the accumulations of animal manure combined with refuse fodder in cow stables reached nearly a foot in depth before Spring weather rendered housing at night to be omitted. What kind of stable air do such milk cows breathe in their stalls? No occasion to suppose that one cow infects another, when the entire group develop manure bacilli together from their local environment. We need not wonder when a cow's teat is found tuberculous under filthy conditions where she stands and lies down. Inspection of quarters and purification of environment of cattle would prove a farther reaching preventive of cattle tuberculosis than does the law for murdering them. But the avalanche of contention against Koch's theory descended. He was but one among men who chose to go further than he had done. He had sensibly declined to allow these to vote him out on a principle that was not votable. And so no deciding conclusion could be settled. Never can be settled by the bacillus which always is incidental to the preceding conditions that developed the bacillus. And all in all, good breathing air, free from the withering blight of poison from the gases produced by burning fuels and illuminants, free from feculent matters, house closeness and rebreathed air, free from unsanitary condition in general, will be the only solution of relief from the tubercular scourge to ever prove successful. Then the improvised expedients of tuberculin serums will fade from serious recognition.

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The Danger of Underfeeding.—D. Roberts (Bost. Med. & Surg. Jour.) finds that chronic catarrhal conditions of the bowels are frequently complicated by functional disturbances from underfeeding; the apparent failure in the treatment of some cases of colitis may be attributed to the oversight of this complication.

CLOTHING—A HYGIENIC HERESY.

BY A. L. BENEDICT, A.M., M.D.

IT is commonly held that in evolving from a state of extreme savagery, two factors led to the adoption of clothing—cold and modesty. Closer archaeologic logic, however, has pretty definitely excluded the first, since human life almost certainly began in the tropics, and even more positively the second. Vanity, not modesty, seems to have the dominant influence in the gradual development of the custom of hanging foreign material on the body and what we have been wont to regard as the primitive and most necessary concession to decency had its origin, not in attempt to conceal, but to decorate.

The human body, thanks to the marked power of regulating the blood supply of the skin and of radiating and, still more important, evaporating water from its surface, can endure external temperature of about 10 degrees C. either way from the normal, without protection. It should be distinctly understood that this mechanism is not possessed by all warm-blooded—or, better, homoeothermic (even temperature) animals. Horses sweat profusely, over most of the surface of the body as does man; cats, rats, etc., sweat mainly in the pads of the feet. This can be shown by tickling a cat's feet, when reflex perspiration—and sometimes motor reflexes of the legs and jaws—are produced. Such sweating is obviously inadequate to lower temperature and, indeed, it is not clearly understood how the small, furry animals maintain a normal temperature when the external temperature is high. Dogs, as is well known, cool themselves by evaporating water from the trough of the tongue. For some reason, they do not often manifest the evil effects of mouth breathing.

When the external temperature is higher than that of the body, clothing still serves a useful purpose in protecting against the actinic rays of the sun. Even thin cotton or linen garments have some effect, but there is good authority for using wool next to the skin for its greater protection against radiant heat and actinic rays and because it does not absorb water. On the other hand, more absorbent fabrics, such as linen and cotton, allow the water to evaporate better so that, while a current of air striking the accumulation of sweat within a woolen garment, gives a sense of coolness, the other fabrics allow for more uniform evaporation. Wool is commonly recommended as a protection against chilling. How this nearly non-absorbent material, which allows the surface of the body to be drenched with hot sweat which rapidly produces cooling by evaporation when and wherever air strikes the skin, can prevent chilling, must be explained by someone wiser than the writer.

It has recently been questioned whether direct sunlight is ever a source of direct benefit to the body. The erythema, dermatitis and even the ultimate tanning or pigmentation of tropical races are more or less pathologic; as is well known, the exposure of the arms and other parts ordinarily covered by clothing, to sunlight on vacations, quite frequently produces serious degrees of inflammation, with suppuration. Sunlight undoubtedly acts as a germicide and it may well be that its action on the highly organized cells

of the human body is also deleterious so that the net benefit of sunshine is due to differences of susceptibility, very analogous to the benefit derived from quinine in malaria which helps the sufferer simply because it harms the protozoon more than it does himself. At any rate, some degree of protection from sunlight seems to be necessary for the human being, excepting when acclimatization has produced pigmentation and lessened susceptibility.

Without reference to temperature, clothing, especially boots, gloves and similar difficultly pervious garments, serves as a mechanic protection, not only against various traumatisms, including bites by animals and venomous reptiles, but against infection with hook worm, and the inoculation of filariae, malarial protozoa, yellow fever, etc., by insects.

For most parts of the temperate zones, however, the main function of clothing is the conservation of the bodily heat, although it should not be forgotten that its use is so firmly fixed by custom and even by law, as to amount to a practical necessity even when not required on strictly hygienic grounds.

It is also worth while to reflect that while clothing does not make the man, it gives a fair index of the nature of the man and lends him a certain dignity and self-respect or detracts from these assets according to its nature. Indeed, it is the duty of every man to dress, not merely to avoid arrest for indecent exposure or chilling, but in accordance with accepted, reasonable standards. Many a man fails to occupy the position that he might, in general society, or even to exert his proper influence in his family, simply because of slovenliness in dress. The word man is obviously used in its general sense, without regard to sex.

A hygienic discussion of clothing, therefore, to be of practical value, must take the ordinary fashion as it is, though not necessarily in its extreme manifestations, and modify it so far as possible, without conspicuous changes, so as to avoid infraction of hygienic principles.

The outer, visible clothing of men, is, at present, both hygienic and convenient, providing that it is made with due reference to season and is properly fitted. The modern use of shoes and, in summer, low shoes, instead of boots, is a decided advantage in allowing better local ventilation and freedom of movement. The more general use of rubbers or of heavy overshoes is advisable, both because it allows the use of lighter and cooler shoes, because it prevents serious inflammatory diseases of various kinds, especially of the respiratory tract and the kidneys, and because it minimizes the introduction into houses of dirt containing saprophytes and pyogenic bacteria and frequently specific bacteria of various kinds.

The most objectionable visible article of men's wear is the collar. This often interferes seriously with the venous circulation from the head and neck and, at best, is tolerable from habit. However, if properly fitted, it may be fairly comfortable, and the standing collar, even of the priestly type—though buttoned in front—is not necessarily more of an impediment to freedom of muscular action and circulation than the turn-down collar. Still, it would be an advantage if the soft rolling collar could be uniformly substituted.

A very important auxiliary article of clothing is the suspender. It may be more than a joke to claim that the races and geographic divisions that have forged ahead of others are the ones that have worn suspenders and thus have been able to utilize a vast aggregate amount of energy which would otherwise have been expended in holding up trousers. The belt, though less conspicuous and somewhat more convenient for certain forms of costume, has a tendency to impede the external abdominal circulation and even to produce visceral prolapse. The writer found, in his own case, that the gastric area by auscultatory percussion was nearly half an inch lower with a belted outing costume than with suspenders. In blacksmiths and others wearing belts and working hard, the abdominal veins are often prominent.

The regulation of clothing according to temperature is a very important problem, and it is just as important to avoid overheating and bathing the skin with a copious perspiration whose subsequent evaporation and the resultant dampness of clothing will induce chill, as it is to avoid initial chilling. The outer clothing and even the shirt may be somewhat adapted to changes of temperature; the vest, at least may be discarded or substituted by thin material, and it is a pity that the movement toward a shirt-waist male costume proved a failure.

But the principal regulation of the clothing according to external temperature, devolves upon the undergarments, overcoats and overshoes. It is senseless to dress according to the calendar instead of the thermometer, though, at seasons when sudden changes are liable to occur, it is probably better to dress too warmly than not warmly enough. Still, it is an open question whether it is not better to rely on an overcoat carried on the arm for emergencies in the spring and fall and whether a sudden fall of temperature cannot be met better by one with insufficient but dry underclothing than by one who has been enervated by overheating and whose skin and clothing are wet with perspiration. A prejudice against woolen underwear has already been expressed though, for the even cold months, in which the ordinary business or professional man scarcely has any visible perspiration, the thick and relatively impervious woolen wear may be better. It should be remembered that it is the air between layers of clothing and in its pores that keeps the body warm, rather than the fabric itself. Most persons find that woolen socks really tend to keep the feet cold, because on the feet, there is almost always sensible perspiration, which the wool cannot absorb so well as cotton. It is scarcely necessary to state that red flannel is no warmer than that of another color and that, in general, the less dye used in clothing worn next to the skin, the better.

The reason that, at the same temperature, one can wear thick underwear in the house in winter, which would be intolerable outdoors in summer, is partly due to differences in activity and to the anaemia that usually develops during the winter in sedentary lives. It is also due largely to differences in humidity, the artificial heating of air reducing the humidity from an average of 50-70 to 5-20, so that evaporation occurs more readily. For this reason, the writer holds an extremely unorthodox view as to humidity

of house air—also because of practical experience in comparing radiator heat with that from furnaces and fire places. Even without any such reason, it is difficult to see why a diminution of atmospheric moisture should be harmful, especially as many health resorts are chosen because of their natural dryness. On the other hand, dampness in and of itself is harmless.

The principal fault of male attire in this country is not insufficiency of clothing in winter—especially since the automobile has developed so many animated Teddy Bears—but redundancy in summer. The late E. M. Moore, of Rochester, once said at an operation that he was the only man present who did not wear an undershirt—a statement which the writer's presence rendered incorrect. For some years, the writer has followed the expedient of having summer drawers made as loose, movable trouser linings and substituting for the undershirt a large handkerchief held about the neck by a tape.

In women's clothing, three principal faults are noted: 1. Inadequacy, or rather sudden changes involving relative inadequacy; 2. Tightness; 3. Dragging weight.

1. Inadequacy. Comparing men's and women's clothing, we find the latter generally much lighter, as regards the arms, neck and shoulders and the feet, ankles and lower legs, while there is a tendency to extra thickness and density over the lower chest and abdomen. The corset is a very warm garment and it may be that the thickness of the clothing over the thoracic and abdominal viscera explains the feminine peculiarities of tendency to excessive abdominal fat, axillary sweating and resistance to exposure which would produce pneumonia, Bright's disease, or at least myalgia in a man. However we may censure women for suddenly changing their clothing in winter, especially for dances followed by exposure scarcely avoided by outer wraps, we must admit that they actually, in the aggregate, show a resistance which men do not.

2. Tightness. This unhygienic feature of women's dress is especially noted about the lower thorax and waist, and on occasions, about the neck also. The characteristic superior costal respiration in women is largely if not ultimately entirely due to this factor. Visceral deformity, displacement and interference with vital functions, is also due to the same cause. Even when the clothing is not tight in the strict sense, it is relatively less elastic and deep, inferior costal breathing is rarely possible, although no actual visceral compression occurs. The relative frequency of anaemia and of certain pulmonary disorders in women is probably due largely to this factor and the conventional dress, even in women of slight build who do not need to lace tightly, is often a marked obstacle to lung expansion and the cure of incipient phthisis. Tight lacers often enjoy excellent health, partly because they are primarily well nourished—this fact being the temptation to tight lacing—and partly because the very tightness of their dress in public leads them to shed it for negligee costume as soon and as frequently as possible.

3. Dragging weight. The hygienic ideal of woman's dress oscillates between a man's suit of clothes

in full bloom and a day-time night gown. Except for very special occasions, it is useless to expect the general adoption of either of these costumes. The great hygienic difficulties of the conventional modern dress, are connected with the support of the stockings and the skirts. The old fashioned circular garters, about which so much was said in their relation to varicose veins, have almost disappeared, in favor of a waist or hip suspensory whose details are familiar to the most modest of men, through street car advertisements. Unfashionable women tend to the use of a multitude of skirts held in place by bands and safety pins about the waist. Obviously, the pull of a vertical elastic intended to keep the stockings taut, plus the weight of several skirts transmitted through narrow bands or strings, will have a greater tendency to cause visceral ptosis than the firm, unintermittent pressure of a corset.

With reference to nephroptosis, however, the writer would insist that the essential cause is not pressure or pull of garments, straining, repeated pregnancy, etc., but a developmental—not congenital but pubertal—defect. Indeed, the type of woman with nephroptosis is thin, naturally slender and, therefore, with no temptation to tight lacing. Most articles dealing with gastropnoptosis are practically useless because atonic gastric dilatation is confused with true ptosis, no attempt being made to locate the upper border of the stomach.

Between waist bands and a corset, the former are more harmful unless the corset is excessively tight, but it often happens that women, overlooking the only possible hygienic usefulness of the corset, first wrap themselves with bands and then constrict their waist with a corset. Shoulder straps to hold skirts, stockings, etc., are frequently advocated by reformers, but they are uncomfortable and inefficient, owing to the natural slope of the feminine shoulder girdle and to the sinuosity of the normal trunk. Some corset waists are worse than the ordinary corsets. A fairly satisfactory solution of the problem, for women not too stout, consists in the use of a gauze vest reinforced by strips of linen or cotton and provided with button holes or hooks to which the skirts, etc., are attached. For very fat women, a firm corset is almost a necessity. Certain cases of nephroptosis and enteroptosis are relieved by a well fitted straight-front corset. But, by care to lighten the weight of the skirts as much as possible, to avoid waist strings, to place the skirts and hose supporters over the corset and to select a corset that is not too tight and not too much like mediaeval armor, the conventional dress can be rendered fairly satisfactory from the hygienic standpoint.

Uterine Hemorrhage.—J. D. Malcolm (Int. Jour. Surg.) advises prompt and thorough investigation of all cases of abnormal hemorrhage, especially in young patients and those in middle life. Uterine curettage and microscopic examination of the scrapings is of diagnostic importance in cases of slight enlargement of the uterus associated with abnormal hemorrhages; this procedure is, however, contraindicated in the presence of complicating salpingitis.

THE COMMON BACILLARY DISEASES.

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IN the November issue of the *TIMES* I discussed three important bacillary diseases, typhoid fever, cholera and dysentery. I here consider such other diseases, having bacilli for their essential causes, as are met with commonly in practice, reserving tuberculosis for a separate paper.

Diphtheria bacilli are short, slender rods, often club-shaped—the Klebs-Loeffler. They cause diphtheritic inflammatory processes and their sequelae, such as paralyses of portions of the nervous system, in consequence of intoxication resulting from the development of poisons. Frequently mixed infections take place from secondary deposition of streptococci and the like. The bacilli find lodgment most frequently upon the nasal mucous membrane, the tonsils, the larynx, the trachea and the bronchial mucous membrane. When the parts from the larynx down are involved we speak of croup. A fibrinous exudate is formed (the diphtheria membrane). In consequence of the formation of very poisonous toxins, as well as of the mechanical results due to the presence of the membranous deposits, very alarming and serious symptoms may supervene. There is high irregular fever, often vomiting, pains in the throat and cough. There is rapid pulse, coma and maybe collapse. Often the lymphatic glands of the neck undergo enlargement, with suppuration, due to secondary infection. There may be breaking down of the tissues of the middle ear and endocarditis and nephritis.

In cases of croup there develop soon, in addition to the rough, barking croupy cough and the hoarseness, the alarming symptoms of stenosis of the larynx. Respiration becomes labored and difficult, inspiration whistling; finally the breathing becomes stertorous, attacks of suffocation occur and portions of membrane are ejected by cough. Cyanosis is marked.

The prophylaxis of diphtheria is most effective when carried out promptly, as it should be with so dreadful a disease.

Diphtheria antitoxin must be used—early; in the present state of our knowledge and experience of this serum, it were tantamount to malpractice to do otherwise. Laryngeal stenosis is sometimes relieved by emetics; but intubation or even tracheotomy may have to be done.

Emetics, intubation, tracheotomy! how rarely are these means required nowadays; they are almost no more than a memory, a memory of the pre-antitoxin practice of some fifteen years ago, when the mortality from the disease was so high, when nasal and pharyngeal injections had to be made, when as Jacoby so graphically observed, the bedroom was like a battlefield, the choking, gasping, struggling child in the hands of his enemies, the doctor and the nurse, in which unequal combat the little victim so often gave up its life.

I have dwelt in another paper on the fact that almost no infectious disease has a single bacterium

for its essential cause; this is emphatically so of diphtheria, in which the streptococcus as often accompanies or is superimposed upon the Klebs-Loeffler. This is in large part the reason why some cases of diphtheria are very mild, why others are virulent and dreadful. In my paper on the coccus infections in the *OCTOBER TIMES* I dwelt upon the role which the streptococcus plays in this disease.

The treatment of diphtheria is familiar. Since it is an air-borne infection isolation is essential; and the customary prophylaxis during and after the death or recovery is to be carried out rigorously. (The present mortality in cases treated in time with antitoxin is stated to be five per cent.) Immunization is by antitoxin; at least 300 units for a child and 500 for an adult; and these injections may in a few days be repeated. The patient is put to bed, the mouth is thoroughly cleansed, the sputum is disinfected, the surroundings are made antiseptic; the attendants are seen by others as little as possible. There is careful feeding, liquid diet; stimulants *pro re nata*. No drugs are of specific value; medications will naturally be used as individual indications call for them. As we know nowadays the antitoxin treatment obviates a great deal of the local treatment, so trying and exhausting to little children. When, however, this is necessary, we swab in pharyngeal cases with solutions of bichloride (1-2,000); carbolic acid 3 per cent.; hydrogen peroxide, full or half strength. In nasal cases we irrigate the nose and throat with normal salt solution. In laryngeal cases we apply hot or cold applications to the neck, steam inhalations, with perhaps comp. tr. benzoate (5i to pint hot water). So long as diphtheria bacilli are present in the throat we cannot consider the case cured or innocuous. We give antitoxin as early in the disease as possible, subcutaneously, of course; local and general conditions are thus rapidly improved. From 1,000 to 1,500 units in mild cases; 2,000 to 3,000 in moderately severe; 4,000 to 5,000 in very severe cases; we repeat and increase these doses as necessary. But after several days antitoxin is no longer efficacious; the principles of immunity in infectious diseases will explain why. One may give too much antitoxin; even after recovery, serum disease may develop. We are going in the near future to hear and read a great deal about serumkrankheiten and anaphylaxis. We inject the antitoxin beneath the skin of the abdomen, buttock, upper arm or other region with loose subcutaneous tissue. Urticarial and other eruptions, or pain and swelling in the joints may follow its use. For complications rest is imperative; strychnine, electricity, massage, etc., are applied. For cardiac weakness we prescribe rest and the avoidance of exertion; tonics and stimulants. I want to write a most important word upon rest in such infectious cases after considering influenza, as I shall presently do.

We speak of pseudodiphtheria (false or streptococcus diphtheria, diphtheroid or membranous angina) as an inflammation caused by streptococcus pyogenes, and resembling true diphtheria in the character of the local lesion, which is membranous. The streptococcus is here the essential cause; and we make the differential diagnosis as between this form and true diphtheria by exclusion under the microscope of

the Klebs-Loeffler bacillus. There is in pseudodiphtheria an inflammation (with a membrane) of the pharynx, tonsils, larynx or nose; sometimes secondary pneumonia. In favorable cases there is the presence of the local membranous lesion in the upper respiratory tract; there is sometimes nasal obstruction, dyspnoea or sore throat. The constitutional symptoms are like those of diphtheria, but the temperature is often relatively higher, the pulse less rapid, and prostration less marked. These symptoms may, however, be very severe. The duration is usually one to two weeks, unless complications arise. Complications may be broncho pneumonia and possibly necrosis of the tissues of the neck; unless such lesions supervene, the prognosis is good. We prescribe bed, fluid diet, catharsis; we irrigate locally with hot alkaline solutions (normal salt), peroxide fuel or half strength, bichloride and other solutions as in diphtheria. Of course we do not use diphtheria antitoxin; if anything of this kind, an anti-streptococcus serum would be appropriate.

Influenza has for its essential cause the *Bacillus Influenzae* which, having the appearance of delicate rods, mostly arranged in pairs and lying in groups of considerable size, is found in the nasal mucous, the sputum, etc. The severe symptoms are due especially to the toxins produced. The disease is frequently pandemic. It begins with a high fever, great prostration and pains in head, extremities and the lower part of the spine. Soon are added coryza, "catarrhal" cough, inflammations in other regions of the body. Lobular pneumonia may result. The bacillus is found in the site of the local lesion and in the blood. One attack does not, unfortunately, confer immunity. The incubation is from one to four days, usually three to four. The invasion is usually sudden, with a chill and all the symptoms of a sthenic fever due to a general infection, and with those of a particular local lesion. The symptoms vary according to the site of these local lesions, and give rise to such types as the following: The respiratory type which begins like a severe coryza, with sthenic symptoms, severe pain in the eyes, back and extremities ("in the bones") and prostration. After the temperature subsides there is often intense general soreness; bronchitis, plurisy, empyema or pneumonia may develop—the latter usually a broncho-pneumonia of irregular distribution, protracted course, defervescence by lysis and slow resolution. There is the nervous type, characterized by severe headache, pain in the back and extremities and prostration; or there may be symptoms of meningitis, encephalitis, neuritis of any type resulting in acute pain or loss of sensation or motion, cardiac neuroses and mental disturbances such as melancholia and dementia. The gastrointestinal type begins with symptoms of acute gastritis (fever, nausea, vomiting, gastric pain), or of acute catarrhal colitis (fever, colicky abdominal pain, free diarrhoea, sometimes jaundice). There may also be all the ordinary symptoms of the general infection; the duration of the disease is from a few days to several weeks. The febrile type; here fever may be the only symptom, remittent or continuous, and lasting several days or two or three weeks. It is often accompanied by pain.

In all forms convalescence is often gradual by reason of the bodily and mental prostration, but especially, I believe, by reason of the toxic virulence. After influenza many remain in permanently impaired health, with chronic bronchitis, cardiac weakness, etc. Respiratory complications, such as pneumonia and pleurisy, are common; herpes, conjunctivitis and otitis media may supervene; phlebitis is rare. Cardiac and kidney affections are considered by some to be rare; I do not believe so; they are oftentimes very serious sequelae. We make the diagnosis by the existence of an epidemic, the demonstration of the bacillus in the sputum, the extreme prostration and the suggestive pains. We differentiate the disease from those which the various types simulate; cerebrospinal meningitis and certain forms of neuritis may be confounded. The prognosis is usually good as regards life in uncomplicated cases; but complications and sequelae may cause death or lead to permanent invalidism. This latter, we know, was very much the case some fifteen years ago when La Grippe visited our people for the first time. Following the law of infections, the initial attacks were most virulent and profound and disastrous. Changes in the human organism were the result. Year by year the germ has been losing its virulence, whilst on the other hand people have gradually been acquiring some sort of comparative immunity to it, with the result that prostrations are not profound nor are sequelae so frequent and varied.

In treating influenza isolation is theoretically advisable; but in practice this is difficult. The sputum and the nasal discharges should be disinfected. Bed, catharsis, good nursing; feeding—these are the general requirements. The symptoms, as they arise, receive appropriate treatment. Phenacetin gr. iii, quinine, gr. i; camphor monobromate, gr. i; these would make up a capsule efficacious for pain. Convalescence will require nutrition, change of air, tonics and the like.

In diphtheria, in influenza, in rheumatism, and in fact in all grave infections we must watch the heart, especially in convalescence. I have from time been deeply impressed in this regard, but emphatically so by the contributions to science on this subject by Dr. Boverly Robinson.* Who has not known such cases as the following: that of a man who died suddenly of "heart failure" while suffering from grippe; that of a little child convalescent from diphtheria who collapsed while playing on the floor; of patients who have succumbed while straining at stool. There is the case of a pneumonia patient who was "convalescing nicely," so well that his doctor permitted him to sit up in bed and play at cards with his wife to while the time away; he suddenly fell back upon his pillow and presently expired. Such cases—from acute cardiac dilatation during or after acute infectious disease—are being heard of with disconcerting frequency.

Such patients should by no means strain, the period of rest for them after these grave diseases should be prolonged, they should be free of anxiety and excitement; they should not too early resume active

life. This observation, applied here to the diseases above mentioned, is appropriate also in scarlet fever, endo- or pericarditis, typhoid, typhus, erysipelas, and other infections. In these cases it is very possible—nay, likely—for the myocardium to be seriously affected by the action of the various toxins upon it. We must therefore fear and take into account a relaxation of muscular tissues, a loss of tone in them, or a parenchymatous degeneration. Particularly must we guard against cardiac dilatation when temperature changes have been marked and prolonged. Besides the toxic element there is the heightened blood pressure, especially within the right cavities, and the impaired resistance which must necessarily follow. In pneumonia, for example, where the pulmonary obstruction is great, the right ventricle cannot empty itself during the systole; and regurgitation into the auricle is inevitable, so that that chamber becomes distended in its turn. Nor can the left heart perform properly its functions by reasons that its chambers contain, instead of the usual amount of blood, so little that the normal systole and diastole are not excited. We must take into account also paralysis of the cardiac plexus. Acute cardiac dilatation will be indicated by a weak, failing or rapid, intermittent pulse, dyspnoea, cyanosis of lips and finger tips, a dusky or ashen or grayhued skin, epigastric pulsation, pain about the precordium, increased cardiac dullness, especially to the right of the median line, and distention of the cervical veins. Under these circumstances the patient must lie prone; we put leeches or wet cups or ice bags to the precordium; venesection is appropriate, for the situation is grave enough; we give strophanthus by the mouth, with brandy or ammonia; or by the needle; we try to have oxygen at hand; camphor and ether (one part in eight) is prepared for injection. The nitrites should be given, to the excellent end that the patient may be bled "from the veins to the arteries;" glonoin in drop doses every fifteen minutes. Robinson emphasizes that the dreadful lassitude generally following upon grippe is due to the dilated heart. And he enumerates in his important paper the following diseases and conditions besides those mentioned here as productive of cardiac dilatation: Chronic endocarditis, renal disease, arteriosclerosis, arduous and continuous work (as among the laboring classes), frequent heavy strain (as among athletes), late syphilis, chronic alcoholism, anemia, leukemia, chlorosis, goitre, angina pectoris, paroxysmal tachycardia, mitral stenosis, emphysema, an old myocarditis, profound emotional disturbance.

Te tetanus bacillus is a long slender rod, with spore formation at one extremity, giving rise to a nail-like or drum-like shape. It is found especially in earth and manure. Contamination of wounds on the feet or the hands leads to the formation of tetanus toxin and its absorption, so that tetanus develops. Infection seems to be more common to certain localities; it often follows functional wounds of the exposed portions of the extremities, the tines of haw forks may convey it. The giant fire cracker and the small cannon are responsible for most of the tetanus consequent upon the glorious fourth. It is most distinctly not a bacillary infection; that is, the

*The Clinical Manifestations and Treatment of Some Forms of Acute Cardiac Dilatation. Am. Jour. Med. Sc., Feb., 1907.

bacilli do not circulate in the blood. It is the toxins which they evolve that are conveyed to the central nervous system by means of the lymphatics and in the blood which produce the dreadful symptoms.

The incubation is from ten to fifteen days; perhaps less. The invasion supervenes with a chill, rigidity of the neck, jaw and face; this rigidity increases gradually to a tonic spasm and extends to the muscles of the trunk and extremities. The body becomes rigid in a straight line, or there is opisthotonos or emprosthotonos; there may be asphyxia from spasm of the glottis; the tonic spasm has frequent exacerbations after any slight irritation and is extremely painful. The temperature is usually low, but may rise very high, especially late in the disease, and even postmortem. Death results from asphyxia, heart failure or exhaustion. In mild cases the paroxysms become less frequent and severe; recovery is possible, especially under the timely use of tetanus antitoxin. We make the diagnosis from the history, the symptoms, and the culture from the wound; we must think of strychnine poisoning, hydrophobia and perhaps cerebrospinal meningitis. We mercilessly (under ether) open up the wound, leaving no pocket concealed; we cauterize—practically our only hope lies in anti-tetanic serum injected early—otherwise it is useless. When we fear tetanus from the nature of the wound and other circumstances, we do not wait for the invasion; we inoculate at once. We isolate and keep the patient absolutely quiet; we give chloroform and morphine for spasms; rectal or nasal feeding may be called for.

The anthrax bacilli are thick plump rods which are found in the "malignant" pustule and in the blood and pus in cases of pulmonary, intestinal and splenic anthrax. These bacilli gain access to man (butchers, brushmakers, rag pickers, etc.), from the hides, and especially the hair, of such diseased animals as sheep and oxen; and they then multiply in the blood. Malignant pustule is attended with large carbuncles presenting bluish-black centers, with lymphangitis and lymphadenitis. From these foci general infection may take place, with the development of irregular fever, delirium, diarrhoea and collapse. Intestinal anthrax (or intestinal mycosis) is characterized by vomiting, diarrhoea, fever, cardiac irregularity or insufficiency, dyspnoea, cyanosis and collapse. It is a disease having a mortality as high as one-fourth the number of cases. The prophylaxis of anthrax requires most thorough disinfection and burial at a great depth of all bodies dead of anthrax. In cases of malignant pustule there must be immediate excision of the carbuncle. Or the local lesion must be cauterized and solution of carbolic or bichloride injected around it or applied to the surface. Stimulation and feeding are important. Early purgation; by this means bacteria may be eliminated in sufficient numbers to affect the course of the disease favorably.

The bacillus mallei, which is responsible for glanders, or farcy, is a small rod which often exhibits white spots. It resembles the tubercle bacillus, except in that it lacks the acid-fast properties of the latter. It gains access to man (usually hostlers, drivers and the like) through the intermediation of horses. It gives rise to the formation of glanders

nodules, which later break down and form abscesses. These occur most commonly in the nose, the bronchi and the lungs; and the adjacent lymphatic glands become enlarged and suppurate. There is irregular and often high fever; and the symptoms of general infection from the generation of toxic products are pronounced. We excise the wound when possible; open up local lesions antiseptically, treating the symptoms. Curative sera have not as yet been found very efficacious. The bubonic plague formerly occurred repeatedly in Europe as an epidemic disease being known in the sixteenth century as the Black Death. It is characterized by a profound septic state. There occurs universal suppurative lymphadenitis (buboes) with hemorrhages. The mortality ranges from sixty to ninety per cent. The disease has only a sympathetic interest for us; for we see practically no cases of it in our communities. It is endemic in many parts of Asia and northern Africa; European governments must always fear it and take prophylactic measures against it. Our own coast health authorities are masterful and efficient; and they guard us successfully against the likelihood of its appearance among us.

Leprosy is rare among us. It occurs in Sweden, Norway, Turkey and along the East Sea. It is very chronic in its course; no incubation period is known. The bacilli resemble those of tuberculosis, but are somewhat shorter. Possibly both are modifications of the same parasite. The leprosy bacillus is found in the skin, the mucous membranes and the nerves. It gives rise to the formation of nodules, with secondary breaking down, in the skin of the trunk, the face and the extremities. There may be also pigmentation of the skin. Leprous extremities may exhibit ulcerations, with exfoliations of portions of fingers. There is the flat nose giving the "leonine" countenance. Leprous neuritis occasions anesthesia and trophic disturbances. If the leprosy of to-day is identical with that of the scriptures it has certainly followed the law by which in the course of the generations the virulence of infectious diseases becomes mitigated; for although we must guard against leprosy there is not nearly the danger from it which seems to have been the case centuries ago. Relapsing fever is caused by the spirillum of Obermeier, an extremely delicate, corkscrew-like organism exhibiting active mobility, and which is found in the blood at the height of the paroxysm of the disease. The disease, a very rare one in the United States, sets in with chill and high fever, which is of the continuous type. There is headache, pains in the back and prostration. The spleen is enlarged; jaundice is frequent. The senses remain clear. On the fifth day the temperature declines by crisis (very rapidly). After a free interval of several days a second usually slighter paroxysm occurs, and recurrence may take place several times.

As my colleagues will note, I here class spirilli among the bacilli class; they seem appropriately to belong here by reason of their properties and modes of growth. We may class also among the bacilli the spirochete pallida, which is considered to be the essential factor in syphilis. This is not at all decided; many doubt that such is the case. But

certain of my colleagues in genito-urinary work, for whose opinions I have great respect, tell me that the spirochete is very likely indeed the essential cause of syphilis. Chancroid has also for its germ cause a bacillus, the bacillus chancro molli of Durey. But a consideration of these two diseases I must resign to hands more competent than mine.

The Use and Abuse of Digitalis.—Janeway (Am. Jour. Med. Sc., June, 1908), considers that few physicians have any idea how difficult it is to get good digitalis; most prescribe a drug which, if good, may save life, without asking as to its character or method of preparation; and often in an inert form. A suit for malpractice would no doubt be visited upon a surgeon who should display similar carelessness in the preparation of his ligatures and dressings. Medical men must face their responsibility; or reap the harvest of deserved loss of confidence and of self-respect. The active principles of digitalis are glucosides, which decompose readily in the presence of moisture, yielding inert or toxic products. Efficient digitalis, and not an inactive or irritating decomposition products thus named must fulfil the following conditions: The leaves must be from plants of the second year's growth, picked at the beginning of efflorescence, freed from stalks, and carefully dried; the dried leaves must be kept absolutely dark and free from moisture in sealed tin or glass containers, and for not more than one year; the preparation dispensed must be freshly made from these leaves in exact accord with the method prescribed by the U. S. P. All this requires intelligence and honesty among all concerned in each step in the process. In the present state of our knowledge we should not concern ourselves overmuch with pure digitalis glucosides; we should learn from personal investigation those druggists who keep good leaves, have them dry and dark, and make the preparation fresh every time it is called for. The worst digitalis preparation is an infusion made by diluting the fluid extract, thus precipitating all of its active ingredients; this is a common practice. Another bad preparation is an infusion made by diluting a so-called mother liquor. Other inefficient forms are the many tablets or pills containing digitalis or digitalin. The only solid form in which the drug should be given is the freshly powdered leaf in capsule or pill. Janeway considers the use of combinations of heart tonics, usually with nitroglycerine to be a most deplorable development in therapeutics; the practitioner who allows himself to give powerful drugs in this way fails to learn the action of any of them. If he thinks at all, he becomes a skeptic. The fluid extract of digitalis is far too strong to permit of easy regulation of dosage; Janeway has never seen satisfactory results from it. There remain two official preparations—the infusion and the tincture, besides the powdered leaves, which, under the conditions above named, may be considered trustworthy. The choice of one of these must be largely a personal matter. One should learn how to give a single preparation and to regulate its dosage under varying conditions. Janeway favors the infusion, chiefly because one can be reasonably sure of having it freshly made

if so specified. In many cases supposed to have been treated with digitalis without benefit, he has seen prompt results follow its use.

Toxic Amblyopia from Wood Alcohol.—W. M. Carhart (Am. Med., April, '08), relates the cure of a painter blind in both eyes after having during three weeks been shellacing the interior of beer vats. Three days before coming under observation he had had vertigo and nausea, causing him to leave work for the day. Resuming his work the next day he complained during the afternoon of imperfect vision, and again suffered nausea and vomiting. During the ensuing night his vision had entirely gone; the next day, on admission the fundi were found hyperemic, the vessels being markedly engorged, so far as they could be traced. Both optic discs were obscured by a swelling of their substance, which was especially great above and below, but not so marked on the lateral aspects; the right eye was the more markedly involved. Free diaphoresis (calomel, magnesium sulphate, pilocarpine, hot packs); leeches to the mastoid region; the Bier method not used because of the optic circulatory engorgement; on the second day K. I. in increasing doses; strychnine hypodermatically, beginning with 1-50 gr. and increasing 1-100 gr. daily; such was the therapeutics. The patient remained totally blind for ten days; on the eleventh he perceived shadows in the left eye, in which vision then slowly increased up to 3-200, after which there was no improvement. The vision in the right eye began to improve a fortnight after admission, when shadows were seen; later it could perceive large objects, but there was no further improvement during a month after. Subsequent appearances of the fundi were of partial optic atrophy, the right being more atrophied than the left. The engorgement of the vessels, as well as the swelling of the discs, gradually passed off. This case was from the beginning typical of neuro-retinitis, which is not common in toxic amblyopia by inhalation. The engorgement of the vessels was much more extensive than usual in such cases; the blindness was for ten days, when some little sight was regained—an unusual phenomena. The fact that the color of the optic discs still showed some circulation after the acute manifestations had subsided, led to the hope of some vision ultimately remaining. It was also favorable that the left field of vision was not markedly restricted, as one would suppose from the damage done to the eye. One concludes that workers who use shellac containing wood alcohol should take precautions; the close confinement of the air in the vats seemed in this case to have caused the damage. Such workmen should therefore leave their work at frequent intervals; and their hours should be shorter. Had this patient stopped work at his first nausea he probably would have escaped very serious damage of his eyesight.

Marital Infection in Tuberculosis.—When we reflect upon the communicable nature of this disease, it would appear that the marital relation would afford most favorable opportunities for contracting it.* If either party is actively consumptive the chances of the mate becoming infected would seem very

*Jour. Am. Med. Ass'n, Sept. 5, 1908.

great. Yet most observers have found that the percentage of husbands infected by wives and vice versa is not nearly so large as the natural and continuous intimacy would seem to warrant. Pope and Pearson emphasize the fact that there is a tendency among the subjects of certain diseases to select in marriage those with like marked tendencies to themselves. It would thus seem probable that there is some sensible but slight infection between married couples; this is largely obscured or forestalled by the fact of infection from outside sources; the liability to the infection depends on the presence of the necessary diathesis; assortative mating probably accounts for at least two-thirds and infective action for not more than one-third of the whole correlation observed in these cases. "But demonstration of this result (states Pearson) depends on the acceptance of the inherited diathesis to be effective; and the existence of assortative mating of equal intensity in the cases of want of mental balance must prevent dogmatism." There is necessity of more complete data in such statistics; the ages of husband and wife at marriage and also at onset and death should be recorded, as also similar data as to the age at onset and death of the parent at the birth of the child and the age of the child at onset and death. The family history is essential; if the marriage of two ultimately tuberculous persons took place before either was suspected of the disease, and if there is in such cases a larger percentage of family histories of tuberculosis than in the case of non-married tuberculous individuals, we should have definite evidence of the assortative mating that seems probable. If on the other hand the percentage were smaller we would have definite evidence of the infection theory. Tables are given which show that the insane, the epileptic, the markedly eccentric or the alcoholic do tend to mate together; whilst more extended data are still wanted the facts so far ascertained should be vigorously impressed on those who assert that the association of tuberculous husband and wife beyond a due proportion in a population taken at random can only be attributed to infection. Insanity must be admitted to be still more transmissible between husband and wife, though in all forms (except perhaps paresis and some toxic insanities) one does not usually attribute it to a micro-organism. The subject of the role of the hereditary element (the congenital diathesis) is an excessively complicated one. Regarding tuberculosis it seems thus far to be fairly well established (if statistics discussed according to the mathematical formulae of probability are of any value) that consumption is not actively contagious between husband and wife; and that a certain previous constitutional condition or predisposition is essential for its contagion to act in any case. The question of an acquired immunity probably does not practically affect the conclusions here stated. All our certain knowledge of matters of sanitary importance is obtained only through the proper application of statistical laws. Inter-marriage of consumptives or those of known predisposition to the disease should be discouraged not only on account of the danger of propagating offspring with like pathologic tendencies, but also because of the actual physical disabilities of the tuberculous, especially in the fe-

male, for fulfilling marital duties. Pearson emphasizes the possible danger from selective preference of the tuberculous for each other in choosing married partners, with its consequent bearings on the propagation of the disease.

The X-Ray and Fractures.—F. L. Cotton (Bost. Méd. & Surg. Jour., Sept. 10, '08), concludes that the most important service of the X-Ray is to add to a fund of knowledge; we have learned what to expect and what to look for; and know now how to look. Many types of fractures formerly supposed to be rare are now known to be common; other lesions, once commonly diagnosed, are now almost unknown. We have now a whole series of joint fractures about which formerly nothing was known. The X-Ray, used as it should be, as one means of examination, gives us great increase of diagnostic power. New signs have been learned—certain displacements have come to be associated, as also limitations of motion, points of localized tenderness, etc., with the associate lesions; thus by means of the X-Ray we have greatly bettered our capacity to do without the X-Ray. Cotton stigmatises the statement that it were criminal neglect to treat a fracture without the X-Ray. Some cases—fracture of metatarsals by direct crushing, of scapula; some injuries above the shoulder joint, crushing injuries of the hand and wrist, fractures of the pelvis, a few hip fractures, some injuries to ankle and tarsus—these do often depend on the X-Ray for diagnosis; but in all these cases simple retentive apparatus until an X-Ray can be obtained is adequate treatment for the first few days. The problem is different with obscure and complicated luxations; but the cases in which an accurate diagnosis is essential to reduction of gross displacements are limited to a few luxations; with or without fracture, in the tarsus and foot. A trained surgeon can diagnose most routine fractures about as well without as with the X-Ray; if he has not the skill to make the diagnosis thus unaided he is not likely to be helped much by the X-Ray. The early taking of X-Ray pictures is desirable, if convenient; but this need not be routine. Cotton emphasizes the importance of X-Rays after reduction as a method of review, for the purpose of correcting error. He contends that the time for the X-Ray is after, not before, reduction, because immediate X-Ray pictures are hard to get, even in hospitals; any great delay in reduction generally means poorer reduction. X-Ray examination does not take the place of the examination under anaesthesia, which latter, when properly done, with immediate replacement of the fragments, usually fulfills the immediate indications. Considerations of difficulty in transportation, expense and procrastination, make it unlikely that more than one X-Ray picture will be taken in a given case; and it had best be taken when it will check both diagnosis and corrected position, and will help in prognosis. Late X-Ray pictures, taken to judge end results should be taken in practically all fracture cases, at least for record, repeating the examination if we may, but certainly using it at such periods as will enable us to establish or confirm the diagnosis and check the treatment; it should not be used in place of skilled manipulation.

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A RELIABLE AND SERVICEABLE MATERIA MEDICA.

JANEWAY observes, in a valuable paper on The Use and Abuse of Digitalis,* that many among us prescribe preparations which on the least study must obviously be inert or inefficient. A surgeon displaying like carelessness as to the quality of his ligatures and dressings would quickly enough be brought to his senses by a malpractice suit; physicians should learn to feel a like responsibility regarding the drugs or combinations of drugs they prescribe. This view somewhat startles one at first sight; yet on reflection it is eminently just. And we must here find one of the reasons for that therapeutic nihilism which has recently been rather rife—a state of the medical mind unfortunate for our dignity as a profession, and (what is vastly more important), unfortunate in that it impairs our usefulness to mankind. Therapeutic nihilism is certainly a huge mistake. For drugs are essential to the practice of medicine. Every one of us who is seeing patients has to ask with Jenner first, "What is the matter with him;" and secondly, "What can we do for him." There are many men who stop short at the first of these questions. Such men fit excellently in that condition of things noted of two great Viennese professors, the one a wonderful diagnostician, the other a brilliant post-mortem operator. The patient goes to A, who with wonderful skill makes the diagnosis; soon thereafter the same patient ends up in the autopsy table where the equally brilliant B conducts an exhaustive macroscopic and microscopic examination of the defunct organs and tissues, upon which he is able triumphantly to demonstrate the correctness of the wonderfully astute diagnosis made by A. Most admirable all this, and unquestionably scientific, yet one somehow feels that

between the field occupied by A and that occupied by B something has been lacking. A latent sense of justice causes us to question whether after all the patient has in these premises had a "square deal."

It has always seemed to us that a confession of ignorance and incapacity is inherent in the position of therapeutic nihilism. The reader may here be amazed by such an audacious statement—when men of so great renown in medicine decry the use of drugs. Well, when the reader's amazement has simmered down a trifle let him consider this: Medicaments have certainly—as much as anything mundane can be certain—been put in our environment to serve natural purposes.

Quinine is under certain circumstances as essential to human existence as is butter or tea; so are calomel and digitalis and rhubarb. But they must be studied and used intelligently; such study and such use is the province of the physician. That is a most essential part of his duty to mankind; else he has, as a physician, no reason for existence. It is the medical man's business to apply the means of cure (of which drugs are an absolutely indispensable part) to the conditions of disease which he finds upon examination. All this seems so trite; it has been the way of legitimate medicine ever since Hippocrates—ever since Adam, no doubt. Strange indeed that there has ever been any occasion whatever to discuss it. Who can doubt the wisdom of Dr. Jacobi's observations, recently expressed before the Medical Society of New York State Medical Society, to the effect that "he is the best doctor who knows the worth and worthlessness of mediums." He is indeed the best doctor who knows his materia medica perfectly to begin with, and then who knows when and how to make application of it. And again observed Dr. Jacobi: The principal function of a medical man has been, is and must ever be to cure the sick; and to accomplish this purpose he must avail himself of those numerous medicines whose usefulness has been demonstrated by the experience of the profession.

To revert to Dr. Janeway's paper, which is abstracted in another column. He considers combinations of heart tonics, usually with nitroglycerin, to be a deplorable development in the therapeutics of to-day. The practitioner who allows himself to give powerful drugs in this way fails to learn the action of any one of them. Such experiences as then results to him makes him a skeptic regarding their efficacy. Mayhap he then starts in on his road toward therapeutic nihilism, before which his patient will, no doubt, be well on the way toward Christian Science or some like bane to humanity. Polypharmacy and shot-gun prescriptions are a mistake; one can-

*Am. Jour. Med. Sc., June, 1908.

not thus gauge the value of any remedy. Drugs should be used, in so far as possible, singly; and when we make combinations we ought to know precisely what the conditions are for which we make them.

THE DYSTROPHIC DIATHESIS OF ARTHRITISM.

THOSE who keep track of the oscillations of medical thought and of nomenclature must have been struck with the absence from the text books of the last ten or more years, of the general discussion of temperament, diathesis, hereditary tendencies, etc., with which every well regulated oral or written course of medical practice formerly began. Quite recently, there has been a tendency to return to the older idea of disease groups. Even bacteriology which, at one time, apparently threatened to restore, in modified form, the still more ancient conception of diseases as entities, has, with better understanding of details, swung the pendulum of thought in the reverse direction. In the first place, a comparatively small proportion of diseases have proved to be directly due to "germs." Secondly, an actual count of the generally recognized specific infections shows that no much over half of them are of bacterial nature. Protozoa and even larval forms of vermes produce symptom complexes which present no general points of distinction from strictly bacterial diseases and the infections due to animal organisms are so numerous that the older allusions to the living causes of disease as "bugs" are almost justified while the use of the word germ to include true bacteria, certain fungi like the actinomyces, protozoa, etc., is almost a necessity in spite of the fact that this concise term has become unfashionable. Thirdly, and most important of all, practically every specific disease germ that has been positively demonstrated, more or less often produces a symptom complex typic of some other germ and, conversely, while we usually think of diphtheria as due to the Klebs-Loeffler bacillus, pneumonia as due to the pneumococcus, etc., clinically indistinguishable cases of these and other diseases may be due to several other bacteria.

Thus, properly to designate a disease, we must mention its causative agent, especially if this is a micro-organism, its morbid histology or pathology or both, and its localization and symptom-complex. At first thought, it sounds tautologic to speak of a pneumococcus pneumonia but about ten per cent. of cases of infectious lobar pneumonia are due to the Weichselbaum germ and other occasional bacterial factors. If we attempt to eliminate this tautology

by restricting the terms pneumonia and pneumonic to the effects of the pneumococcus, we necessitate the still worse tautology of "pneumonia of the lungs" for the pneumococcus may attack the upper air passages, the serous surfaces, including the meninges, etc.

C. Fornet, in the *Revue des Maladies de la Nutrition*, (Sept., 1908), goes far in expressing the tendency to group diseases into etiologic categories. Under the head of the dystrophic diathesis of arthritis, he includes considerably more than our fathers meant by "rheumatism." Thus, various inflammatory conditions of the nose, throat, lungs, parenchymatous inflammations of the glandular viscera, nervous phenomena, inflammatory exudations from the large serous sacs, gout, diabetes, dyspepsias, biliary lithiasis, cardiac and vascular lesions, plethora, the "uric acid diathesis," certain forms of urethritis and dysmenorrhoea, obesity, asthma, vascular diseases of the skin, eczema, etc., and various other details are included under the general description of the diathesis.

Among the causes of this diathesis, most of those mentioned by the author are familiar to our readers so that we shall not attempt to enumerate them. However, one that is generally ignored by us is wet-nursing or artificial rearing of infants, on account of the tendency to super-alimentation.

Excepting for embolism in certain cases, the author cited objects to the conception of metastases in rheumatism. He considers a universal disturbance of metabolism to be characteristic of the diathesis and that the metastases, ordinarily so-called, depend upon local exciting causes which merely determine where the general dyscrasia shall manifest itself. However, the rather characteristic tendency to relief of one local manifestation as a fresh one develops, can scarcely be explained on the theory of the author.

A very enlightening, though not altogether original conception of N. Gueneau, of Mussy, is that of an external and internal integument, with the term endermosis to be applied to an involvement of mucous membrane analogous to that of a skin lesion. Thus, asthma, whose connection with the rheumatic diathesis is pretty generally recognized, becomes a spasmodic rhino-bronchitis, analogous to urticaria. Similarly, various painful visceral troubles ("visceralgias") are considered as analogues of eczema. In support of this conception, is cited the very general occurrence in the exanthemata, of mucous membrane lesions which differ from those of the skin mainly on account of the delicacy and moisture of the former.

This conception, though not original, is presented in such an illuminating way that it clears up a good many puzzles that are encountered in the bizarre

manifestations of "rheumatism," especially when we contrast the manifestations in members of a family with the same taint. In particular, it throws light on the rare complaint of internal itching, of which many cases have been observed. While the first thought has been that such cases were purely hysterical, they have occurred in patients without other neurotic manifestations, and have been located in the trachea, stomach, etc., and the sensations have remained so long in the one spot as to corroborate the patient's apparently absurd belief that they could be relieved by scratching.

Articles of the nature of Fernet's are of great value, especially in view of the tendency, laudable enough indeed, to direct the more elaborate methods of research at the elucidation of details. True knowledge can be obtained only by a thorough grasp of causes and relations.

A word of caution may, however, be in order, not only with reference to this particular diathesis but to the modern research on arterio-sclerosis, which necessarily includes attention to distinctly visceral lesions, and, indeed, to all attempts to group disease manifestations according to their ultimate cause and nature. Subject to some possible exceptions, we must abandon the attempt to give a uniform conception to a disease name. For example, we would seriously question whether all cases of obesity, diabetes, asthma, eczema, etc., can be considered as belonging to the arthritic diathesis. If they did, the term arthritic would be highly objectionable, on account of its limited meaning. We have never seen a satisfactory definition of diabetes nor do we believe that all cases properly called diabetic with our present understanding can be included under a common definition, not even that of a manifestation of degeneration of the islands of Langerhans. Asthma is sometimes pretty plainly shown by the success of nitrites, etc., to be due to spasm of the bronchioles. In other cases, it seems to be mainly due to relaxation of blood vessels when, diametrically opposite treatment is required. Moreover, the inflammatory element may be more or less prominent.

One may even say that many cases ordinarily called rheumatic have nothing whatever to do with the rheumatic diathesis, and the same general principle applies to all nomenclature. Here, indeed, is a hint for medical statisticians. Part of our morbidity and mortality reports are based on an etiologic factor; other parts on anatomic location or clinical features of a disease. The result is that they are worthless for certain forms of inquiry aimed at ascertaining totals on any one of these lines.

Another point worth considering in this connection is the modern tendency to describe "symptom-com-

plexes." It is self-evident that a clinician of wide experience is bound to encounter large numbers of bizarre cases, not typical of any disease and often of very doubtful etiology. It is obvious that, if careful records are kept, it will be possible, in the course of a few years, to collate a group of cases which closely resemble one another either in symptomatology or in some pathologic feature or in the joint involvement of certain organs. But the temptation to describe a new disease should be curbed unless a pretty definite and significant morbid physiology is apparent.

THE POTENTIAL EFFECTS OF DIVORCE LEGISLATION.

A WAVE of reform in the matter of divorce is passing over the entire country and has already had its effect in greatly restricting the freedom of divorce. Without entering into details, we wish to enter a word of caution regarding the danger of too stringent legislation. First of all, no form of morality depends primarily on compulsion. Secondly, the majority of reformers along this particular line seem to be grossly ignorant of the fact that monogamic marriage has evolved spontaneously among most races, without reference to the form of religion and without legislation. In the selfish luxury and power of the barbaric stage of evolution, it has given place to polygamy and in certain peculiar local circumstances, to polyandry or free love, but with civilization and enlightenment, monogamic marriage has been restored. In other words, marriage is a divine institution in a much broader sense than that of Christian ecclesiastics, and represents not only the ideal social state but the one in which the greatest average individual happiness is secured.

Thus the implied or expressed notion that the permanence of the marriage relation is to any notable degree secured by compulsion, religious or civil, is entirely false. On the contrary, the very idea of compulsion in such social matters tends to defeat its own end. Among the American Indians—excepting the higher barbarisms of the middle of the continent—divorce was absolutely free, but probably for that very reason almost unknown.

With the advance of civilization, the increase of leisure, the emancipation of woman and the development of a many-sided social and intellectual life, the possibilities of domestic friction have vastly increased, just as the potentialities of an ideal harmony of body, intellect and spirit in marriage, have increased. We may regret the passing of the simple life, for this or other reason, but we must regard it as a condi-

tion, not a theory. Another important point to consider is that both by law and custom, the authority of the head of a family has become almost entirely a matter of personal influence or merely nominal. The married man is still, both nominally and actually, responsible for the proper conduct and support of his wife and children. Under existing conditions, he is practically powerless to enforce his nominal authority in the face of opposition.

Whether domestic infelicity is on the increase or not, whether there are preventable reasons for it or not, whether it is the fault of society at large or of one or more individuals in any given case, we must recognize the plain fact of its rather frequent existence. In certain states, there is one divorce for every seven marriages. This is probably a high ratio, determined by the very laxity of the law in these states. Whatever the true ratio may be, there is a pretty definite mortality rate of marital love, just as there is for an organic disease like typhoid.

We question whether a law which forbade the burial of typhoid fever corpses would lead to better nursing, better medical attendance, or better domestic sanitation so as to lead ultimately to a diminished typhoid mortality. On the contrary, it would lead to clandestine burials, false reports as to disease, desertion of homes burdened by a decomposing corpse and various other sanitary and social disasters. Similarly, we question whether a definite, national interdiction of divorce, which is the formal burial of a dead love, would lead to any better results from the standpoint of social sanitation.

Monogamic marriage is almost universally acknowledged as the basis of society. It is also an acknowledged, though unfortunate fact that it sometimes results in death of affection, and very much the same misery and offense against public decency that would result from an unburied corpse kept in the house. Under certain favorable circumstances, the corpse may be mummified and kept hidden without public offense or even great private affliction, so that divorce is never a matter of compulsion. Certain states have decreed that burial of this corpse may be allowed for one or more causes of death, not for others. But the fact remains, first, that domestic infelicity though relatively frequent, occurs in a small minority of cases; secondly, that it is due to no one cause; thirdly that when it occurs, it is usually intolerable. It is pretty generally conceded that if there is a hell on earth, it is found in connection with the discontinuance of amicable marital relations.

To compel the toleration of an intolerable condition is very much like the meeting by an irresistible force of an insuperable obstacle. Some sort of a cataclysm is bound to occur.

We do not by any means advocate free love or free divorce, but we question seriously whether domestic infelicity is ever due to a knowledge that it is subject to relief. Undoubtedly, certain frivolous individuals, incapable of deep affection or of a sense of personal or civic duty may adhere to a quasi state of marriage under rigid laws and may contract multiple marriages under lax laws. We do not consider, however, that such persons represent the type of humanity or that their example, one way or the other, is of great importance. On the contrary, we have noticed that two strange cats, given the freedom of a yard, will usually be friendly and that they will almost invariably fight if tied together by the tails, and that the threat of punishment or a sense of inevitability very often leads in human beings to a violation of the very principle which is intended to be supported and strengthened.

So far as we have been able to observe, either in the historic or individual sense, a strong, deep, pure trans-sexual love which is the theoretic and, to a large degree, the actual basis of marriage, is absolutely unaffected by ecclesiastic or civil rulings with regard to future developments. But, the general knowledge that a possibly intolerable condition will be compulsory, does, so far as we can observe, influence the tendency to yield to the beginning of such a passion. The burned child does not always shun the fire—indeed, in this particular it is surprising how frequently he puts his hands into it again and is deliciously warmed instead of burned—but the child who has seen his companion burned also frequently benefits by the vicarious experience.

In regard to every contract except that of matrimony, the state assumes that fraud, bad faith in fulfillment or inability to continue the contract except at unreasonable sacrifice, shall release from it. That the state has often gone too far in extending leniency in commercial contracts, is not denied, nor is it claimed by implication that the marriage contract should be debased to the level of a business agreement, yet, unless the same principle of law and ethics is applied, to some extent, precisely the same result will follow, namely, reluctance to entering into the contract.

Indeed, this result is already in evidence. The very agitation against easy divorce has brought to the attention of every intelligent youth—and most of our young people are intelligent—the undeniable fact that marriage involves a large element of risk and a risk of such a nature that it transcends in importance any financial or physical risk. Men and women actually do pay any amount of money at their command, they sacrifice their business and social standing, they even take their own lives to escape from an

unhappy marriage. These are facts of daily occurrence and public report. It is also a fact that, so far as any physical or personal social necessity is concerned, marriage has ceased to have any weight. Whether we approve or not, all material comforts of a home, every detail of personal care and service, can be obtained by a man more cheaply and without permanent obligation, without marriage. While relatively more desirable for the average woman, marriage is still very far from being for her the economic or social necessity which it was even fifty years ago. In short, aside from the obvious duty to the race—a duty which becomes less obvious on superficial consideration as population increases—marriage has become desirable almost solely on sentimental grounds with the chance of becoming intolerable if these grounds prove false. Even men and women whose marriages have been successful, say openly that a man is a fool to get married and that their own happiness is exceptional.

With all allowance for insincerity, sophistry and immature judgment, and with the fairly optimistic belief that approximately ninety per cent. of marriages are reasonably successful or, at least, tolerable, we must not overlook the fact that a very considerable number of the rising generation of both sexes, have formed the decision that they will not marry. One person's experience does not extend far enough to judge accurately of the gradual changes occurring through a series of generations, but it seems to be a fact, comparing the recollections of older persons with the expressions of the younger generation just reaching a nubile age, that the change of view in this respect is real and not apparent. The same opinion is also received from a comparison of modern with older literature. It is significant also that, to a considerable extent, the rising generation explains its disinclination to marriage very largely on the ground that an error of judgment can not be easily remedied and that it is becoming increasingly more difficult to remedy it.

We do not overlook the fact that a great many, probably the large majority of the young men and women who so glibly announce their intention of remaining single, do ultimately marry. Yet the undue postponement of marriage is an evil, not only to the state, but to the individual couple. For the better classes of society, the average age of marriage has advanced just about five years in the last two generations. Here again, literature is a better guide than personal impression. A large proportion of the heroines of modern novels are at or beyond the age formerly accepted as the seal of old maidenhood. Not only is it more difficult for the average man and woman to adapt themselves to married life after five

years or more of single life after a mature age, but, in the period in which the resolution as to single life has been kept, the conduct with regard to the opposite sex will often have been far from blameless and, at its best, it will have led to a broader social experience, which, in itself, will lead to a more critical attitude toward a single life companion.

Is it not worth while to consider whether legislation, however desirable from the ecclesiastic or even the broader ethical viewpoint, which places matrimony before the rising generation in the light of a possible danger and a danger that is very nearly irremediable, is not of itself dangerous?

PRO AND CON.

AN anti-tobacco league is about to set its prohibitory machinery in motion. Even now, the ubiquitous lay press reporter finds men seen smoking in the public squares and parks and approached politely, even cordially—but firmly, withal, and warned of their evil ways; they are not now presented with tracts concerning things spiritual, except by indirection; instead they are supplied pamphlets which are a veritable counterblast against the pernicious weed. Pipe, cigar and cigarette must go; and above them all must be banished the fine cut and the vulgar plug. Does the citizen addressed enjoy sitting next a chimney emitting smoke? No, he does not; but is he not nevertheless transforming himself into a human chimney poisoning the air with vile gases? It is, however, when we come upon the following, that we must confess to being considerably nonplussed: "The tobacco habit can no more attach itself to a truly spiritual life than fungus can attack itself to a healthy tree."

When we have got this far into the pamphlet the impression becomes ineradicable that a feminine influence—such has since the beginning of time been busied chiefly (and we fear, with not nearly the deserved success) in the uplifting of mere man—is behind this new anti-tobacco league. Of this there is such "internal evidence" as the statement that women are appealed to to help uproot the hideous habit of smoking; it is intimated that in the coming suffragettes' constitution (which in the course of human events seems now inevitable), there will be an anti-tobacco plank.

In these circumstances it cheers us much to find that a woman physician, "one of the best known practitioners of Philadelphia and a member of the County Medical Society," recently defended before a woman's club the tobacco habit among men; nay more

than this, the lady (Dr. Rachel S. Skidelsky), truly startled her sisters by advocating the use of tobacco by them. Many physicians, she declared, were of her mind; but they hesitated to advise their women patients to smoke because of a fear that what was offered as medicine might become habitual indulgence. "Tobacco if pure and properly used might be beneficial to women; it is known to be valuable in functional disorders of the nerves; as men find it valuable to soothe their nerves in the midst of cares or worries I do not see why women, whose worries are more numerous and whose nervous organization is more delicate, should not find benefit in its proper use also." "If a woman would sit down for five minutes before beginning her day and give the time to a cigarette, she would be able to plan better the day's work, and five minutes thus used three times a day would be, I think, of much benefit to her."

We must confess all this to be a question beyond our editorial ability to decide; we can but give the pro and con. Having done which we reach over to the familiar place, open the box (our friend of many years), cut our cigar in the usual way and resign ourselves to the accustomed never-failing comfort; thinking while the aromatic clouds we thus produce arise before us, of the multitudes of poets, artists, divines, philosophers, friends of humanity, all good men and true, whose beneficent example we are following. But the "truly spiritual life" and the fungus and the rest; the thought of this certainly does make us falter a trifle before we raise the lighted match and apply the bliss-evolving suction.

Morphine.—West (Practitioner, July, 1908), believes that if the adult patient with pneumonia passes twenty-four hours without sleep, something must be done to rest him or he will die of exhaustion. Ordinary remedies failing, no longer time can be wasted; morphine must be used, with great discrimination, of course, especially in pneumonia. The great objection to this remedy is that it diminishes respiratory sensibility and thus checks cough and expectoration. Yet for sleeplessness we must give morphine when ordinary remedies fail; the greatest benefit is often had from it. West's guide to its use is the amount of secretion in the air tubes. It should not be used when there are signs of congestion in the non-consolidated areas; such cases are practically always fatal, and morphine simply accelerates the end. When the rest of the lung is not congested (when it shows no signs of bronchitis) morphine may be given (preferably by the needle) without risk and with great benefit. The resulting sleep may be so profound that coma may be suspected; but in the regular doses coma is impossible and the deep sleep is due to exhaustion. (Such patients should however never be left without a nurse; disaster may otherwise result.)

BIBLIOGRAPHICAL

A Text-Book of Diseases of Women. By Chas. B. Penrose, M.D., Ph.D., formerly Professor of Gynecology in the University of Pennsylvania. Sixth revised edition. Octavo pp. 550, with 225 original illustrations. Philadelphia and London: W. B. Saunders Company. 1908. Cloth \$3.75 net. Half Morocco \$5.25 net.

This book presents the best teaching of modern gynecology for the medical student and the general practitioner.

In most instances one method of treatment for each disease is advised, in order to avoid confusion. Anatomy, physiology and pathology is generally omitted, except in special cases, where elucidation of the subject demands.

The text is concisely written, practical and fully illustrated.

The demand for a sixth edition shows the esteem in which the work is held by the profession.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, Jr., M.D. Associate in Clinical Medicine, Jefferson Medical College; Chief of Medical Clinic and Assistant Physician, Jefferson Hospital, etc. With 212 original illustrations. Octavo pp. 548. \$3.50. Philadelphia and London: W. B. Saunders Company. 1908.

This book presents within reasonable compass the principles with which it deals, and applies the same to the practical study of the diseases of which it treats.

Especial consideration is given to clinical anatomy and to the origin, mechanism and meaning of normal physical signs to meet the requirements of the Junior Student, while pathology and diagnosis are duly considered in behalf of the more advanced student.

The text is the result of ten years' clinical and teaching experience in internal medicine and study of pathology by the author in Jefferson College and Hospital.

The work is concise, reliable and practical. Just what the student and the practitioner should have for daily use as a hand-book. It is superbly illustrated, and its physical properties cannot be excelled.

A Text-Book of General Bacteriology. By Edwin O. Jordan, Ph.D. Professor of Bacteriology in the University of Chicago and in Rush Medical College. Fully illustrated. Octavo pp. 557. \$3.00. Philadelphia and London: W. B. Saunders Company. 1908.

This is an excellent text-book on general bacteriology, and as such it can be commended to the student in this subject.

The text is the result of many years' teaching and will be found clear, concise and practical.

The student in any department of science will find this work of service.

The general introduction to the subject in the first chapter, will interest any reader.

The general practitioner who desires to keep abreast the times should obtain a copy, as it is not beyond his understanding.

Obstetrics for Nurses. By Joseph B. De Lee, M.D. Professor of Obstetrics in the Northwestern Uni-

versity Medical School, Chicago. Third revised edition. 12mo. pp. 512. Fully illustrated. Philadelphia and London: W. B. Saunders Company. 1908. Cloth \$2.50 net.

This book is intended for medical students as well as nurses. The subject is presented in a helpful, clear and interesting manner. It is fully illustrated, expressly for their work, and chiefly original.

The present edition has several new illustrations, describes Bier's congestion treatment for mastitis, and refers to the latest practice in infant feeding.

It is a superb book in every way.

A Reference Hand-Book for Nurses. By Amanda K. Beck. Graduate of the Illinois Training School for Nurses. Second edition, revised. 16mo. pp. 200. \$1.25. Philadelphia and London: W. B. Saunders Company. 1908.

The second edition of this useful little book contains extensive additions to the section on weights and measures and to that on solutions. There is also a new section on toothache and its emergency treatment and some useful illustrations.

It is a most handy book for its purpose. Just what any nurse will find of service.

Intestinal Auto-Intoxication. By A. Combe, M.D. Professor of Clinical Pediatrics at the University of Lausanne (Switzerland), etc. Together with an appendix on the lactic ferments with particular reference to their application in intestinal therapeutics. By Albert Fournier, formerly Demonstrator at la Sorbonne, Paris. Only authorized English adaptation. By William Gaynor (States, M.D. Clinical Assistant Rectal and Intestinal Diseases, New York Polyclinic, etc. With eighteen figures in the text, four of which the colored. Octavo pp. 461. New York: Rebman Company. 1908.

The publication of this book is timely and meets an urgent need. The subject of auto-intoxication is rapidly increasing in interest, as most cases of this affection are now recognized and treated in some way.

The text is practical and full of useful information for the clinician.

It is a book for the general practitioner.

Obstetric and Gynecologic Nursing. By Edward P. Davis, A.M., M.D. Professor of Obstetrics in the Jefferson Medical College, Philadelphia, etc. Third edition, thoroughly revised. Illustrated. 12mo. pp. 436. \$1.75. Philadelphia and London: W. B. Saunders Company. 1908.

No obstetric nurse should be without a copy of this practical book, and in fact the general practitioner will find in it information of service to him.

The work may be considered absolutely reliable, because of the standing of its eminent author, and it is commended to our readers with the utmost confidence.

Practical Points in Anesthesia. By Frederick-Emil Neef, B.S., B.L., M.L., M.D., New York. Price Semi-De Luxe-Cloth 60 cents, postpaid. Library De Luxe Ooze Flexible leather \$1.50 postpaid. Surgery Publishing Co., 92 William Street, N. Y.

This practical monograph presents the author's impressions on the correct use of chloroform, ether, etc., and is a simple and coherent working method, and is of particular value to those general practi-

tioners who are so situated that the services of a trained anesthetist cannot be secured.

The subject is condensed to about fifty pages, but every page is replete with valuable data.

General Pathology. By Ernst Ziegler, Professor of Pathological Anatomy and of General Pathology in the University of Freiburg in Breisgau. Translated from the eleventh revised German edition. Edited and brought up to date by Aldred Scott Warthin, Ph.D., M.D. Professor of Pathology and Director of the Pathological Laboratory in the University of Michigan, Ann Arbor, Mich. With 604 illustrations in black and in colors. Octavo pp. 781. \$5.00. New York: William Wood and Company. 1908.

This great standard text-book, now in its eleventh edition, is a splendid example of a scientific work, practically free from subjectivity, one-sidedness and prejudice and to this achievement we owe a large part of the medical culture covering many years, and its influence upon the development of medicine, cannot be estimated.

The American editor has brought the subject fully to date by important additions, which the medical student will appreciate.

The reputation of this work is beyond question, and our readers will find the present edition amply abreast the times.

The text is splendidly illustrated.

Clinical Bacteriology and Haematology for Practitioners. By W. D'Este Emery, M.D., B.Sc. Lond. Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green, etc. Third edition. Octavo pp. 252. \$2.00. Philadelphia: P. Blakiston's Son & Co. 1908.

There can be no question as to the usefulness of this hand-book for the general practitioner. It will enable him not only to make examinations himself, but will show him how and when to obtain them from the laboratory, which should go hand in hand with the clinician.

The text is clear, concise and to the point, and amply illustrated.

International Clinics. A quarterly of illustrated lectures and especially prepared original articles by leading members of the profession. Edited by W. T. Longcope, M.D. Philadelphia and London: J. B. Lippincott Company. 1908.

This volume, as usual, is filled with interesting practical information of great value to the busy practitioner. Now is the time to subscribe for it for the coming year. It is well worth what it costs.

Diseases of Children. By William Nelson Mundy, M.D., Professor of Pediatrics in the Eclectic Medical Institute, Cincinnati, O. Second revised edition, illustrated, 8-vo., 512 pp. Cloth, \$3.00. The Scudder Brothers Co., Cincinnati, O.

This practical text-book was written for the Eclectic practitioner, but there is much in it that will be found of service by any unprejudiced physician. We should suppose that the book would be very popular with the class for which it is intended.

The text is concise, clear, and the part devoted to treatment is fully elaborated.

CORRESPONDENCE

FOREIGN MEDICAL STUDY.

To the Editor of the MEDICAL TIMES:

The question of the practical value of European study for American medical men, is one frequently discussed, and answered variously according to the experience and personal equation of the individual. Obviously, few or none can answer it from a personal experience of any considerable extent in more than one European center and, in many instances—for instance, the present one—the duration and amount of the experience is insufficient to render the opinion authoritative.

But, from some first-hand and more second-hand experience, it may be stated that the undergraduate American student had better confine himself to America. There are various economic and patriotic reasons for this statement, which need no discussion. Whatever the conditions were twenty or even ten years ago, we now have several American colleges of the highest rank and prestige and, generally speaking, the equipment both of these colleges and of the hospitals connected with them, is superior to that of European institutions. Again, the man who expects to practice in America should develop in an atmosphere of American medical history, precedents, ethics, and customs, and with a familiarity with the American pharmacopoeia. In a purely business way, it is probable that a foreign accent, retrousse chin whiskers and a European way of looking at things in general, will place him at a disadvantage.

As for post graduate study, there are now several American cities that offer opportunities for advanced research in nearly every branch, fully equal to those obtainable in Europe, except for rapidly acquiring a rather extensive clinical acquaintance with certain diseases, as echinococcus cyst, and certain phases of skin and nervous practice. Then, too, it must be remembered that certain highly specialized lines of medical work necessitate training at the hands of some particular master, who may be in America or Europe.

On the other hand, the opinion sometimes expressed that the value of European medical study is merely prestige or that it is simply a matter of advertising, is not or, at least ought not to be true. A small proportion of the laity can be impressed by any kind of an insincere advertising dodge by a regular physician. The gullible public goes to the quack, not to the man who pretends to be ethical. Still less can the physician who aims at a consulting practice, deceive his professional brethren.

The recent graduate, preparing himself for general practice, should hesitate before going to Europe for an immediate postgraduate course. He does not know for what he is best fitted and his prime need is to acquire practical proficiency in dealing with ordinary cases in private practice. He may find himself entirely unfitted for a medical career. When he has passed through the crucible of a few years of actual practice, he can intelligently choose a postgraduate course and decide where he had best take it.

We recall an instance in which a fond father wished, at considerable sacrifice, to send his son to Europe for postgraduate work. "Wait a while," was the boy's answer. "You have been dropping money into

an investment for a good many years. The time has now come to find out whether the investment is any good." In this case, as in many others, if the boy had gone to Europe immediately, he would undoubtedly have devoted himself to so many lines of work that none would have done him any particular good or he would have selected some one entirely different from that in which he gradually found himself centering his interests.

If an American graduate, after due reflection, decides to take a trip to Europe, he should set aside entirely the notion that he is going to get a great deal of prestige for a very small outlay of effort. If he is already a busy man, with an established line of practice which it would be unwise to change, and if his vacation is necessarily short, he should weigh carefully the question whether he does not need the rest and the general education of the intelligent sight-seer, rather than to spend his time in essentially the same kind of work that he can do at home. Let him, by all means, visit some of the hospitals, get acquainted with some of the prominent foreign physicians and see how they do their work. Let him also visit the foreign medical "libraries" (book stores), museums, and instrument depots. But, when he returns to America, let him be honest enough to admit that he has done no real postgraduate work.

The American traveler should also remember that foreign clinics cannot be turned on or off at his convenience. He should plan exactly what he wishes to accomplish and what instructors he will seek, in advance, and learn when he can take the courses that he selects.

A common and wasteful habit of Americans taking courses in Europe, is to omit the preparation in the rudiments which can be obtained in almost any American city or even by study in one's own office. First of all, this preparation should include an ability to read and speak German or French, as the case may be, to a moderate degree of proficiency. Many German physicians and a few French ones, know some English, and some speak it surprisingly well. Yet, in general, a knowledge of the popular language is necessary, and it is advisable, even when the prospective teacher speaks it well enough, to be able to communicate with patients and assistants, to be able to follow text books and written notes and to save the instructor the trouble of repeating his remarks for the sake of one who understands only English. However, if one can read a foreign language fairly well and can express himself in it even with difficulty, he will probably find himself sufficiently proficient after he has been steeped in its atmosphere for a week or two.

It is sheer nonsense for an American to plan a course in pathology, chemistry, physiology, etc., in Europe, with merely the hazy recollection of a rudimentary undergraduate course in an American college, and with no familiarity with laboratory methods. He should acquire as much proficiency as possible in the chosen branch before sailing.

Again, unless there is some well considered reason and a fair chance for making a complete change of the nature of one's practice, it is folly for a medical practitioner to expect to metamorphose himself into a surgeon, dermatologist, ophthalmologist, patholo-

gist or chemist, or vice versa. If he is convinced of the wisdom and practicability of such a change, he should fully appreciate the difficulties in the way and the considerable time required and unless he has ample financial means and time at his disposal, he should do most of the preliminary work at home.

In short, with due allowance to the legitimate curiosity to see a famous surgeon operate, or to get an insight into methods in vogue in other lines of practice, the American student in Europe should not dissipate his energies but should confine himself to the particular branch in which he is interested and should make up his mind that hard, steady, well planned work in that line is necessary.

It is undoubtedly true that the average scientific level of European practice is higher than with us, but this is true simply because we have the survivors of a totally inadequate system of medical training. The American physician who has had a thorough general and medical education, who has kept up with modern advances and whose practice has been consistently and persistently in accordance with the higher standard of the real workers in America, may modestly feel that he is fully up to the corresponding standard of Europe. A really wise man may learn something from every ignoramus with whom he comes into contact, but a modest though fair estimate of one's own attainments is necessary to get the best of a European course. For example, the writer wished to take a special course in a subject in which he was particularly interested. Through a failure to secure a perfect understanding, he was placed in a rudimentary class and, though he obtained some new points he found the course completed just at the point at which it should have begun. Fortunately, the training desired was obtained in an entirely informal way.

The established expert in any particular line will, of course, be known in almost every medical center by his colleagues, and his study will naturally and properly be limited to informal discussions and will be of rather brief duration. It should, however, be said in all frankness that, while the German physicians as a rule, are pretty well in touch with American medical work, the British and French are not so broad in their acquaintance. They will, undoubtedly, know the few most prominent Americans by reputation but, on the other hand, they are liable to confuse with these, a number of Americans more skilled in the art of keeping themselves before the public than in scientific medicine. Of the Americans who may properly and in a complimentary sense be considered in the second class of excellence, they know very little.

With equal frankness, it may be said that the naive influence of longitude in determining fame, even in our own country, is manifest in Europe to a still greater degree. In other words, it requires a conscious effort to realize that information may travel from West to East and, especially when the European physician does not happen to know the American by name, he naturally and without the least desire to be offensive, is inclined to underrate the latter's attainments. This attitude is all the more pardonable because the American usually comes avowedly as a student.

A. L. B.

Damp Bandages in Typhoid.

To the Editor of the MEDICAL TIMES:

In the MEDICAL TIMES for November, in his very interesting and instructive paper on typhoid fever, Dr. Page says: "Apply damp bandages around the body from the armpits to the hips, and freshen as often as they become hot."

Query: Would it not be equally as effective and much better to apply icebags to the inside of the thigh and under the armpits, and avoid frequent disturbance of the patient, and also give greater security against the inattention of a careless nurse, as the renewals would be less frequent? Cold applied over the course of the large blood vessels will reduce the temperature, and this, I presume, is the object he has in view.

Hillsboro, Ill.

AMOS SAWYER, M.D.

RETROSPECTIVE

Cancer Problems.—J. Ewing (Arch. Internat. Med., Feb. 15, '08), discusses: the parasitic theory; the theory of cell autonomy; the modern biologic and biochemic study of tumors. He emphasizes the theory of cell autonomy and the conception of tissue tension, since in this field lies the greatest promise of eventual solution. The mechanical pressure of cells upon each other, the influence of specialized functions, the distribution of nutriment and organization all tend to form the forces controlling cell multiplication and maintaining the tissues in physiological equilibrium. Organization in tissue tension furnishes the greatest support to the theory of the development of malignant tumors; and the internal processes in cell division have an important bearing on the question of organization and tumor growth. Equilibrium is only maintained so long as cells multiply by normal mitosis; and each stage of differentiation in one group is accompanied by equivalent antagonism in others. But if this normal mitosis becomes deranged by altered conditions, single chromosomes may be destroyed, and the resulting cells will not receive the ancestral qualities in normal proportion, a new biologic cell type resulting which will have no proper antagonists to balance it. If the posterity of such cells thus thrown out of the organisms suffer the same disturbance of the mitotic process, they will eventually fail to receive any restraining influence from the organization; and it is by such a process that the theory of cell autonomy accounts for the development of malignant tumors. This theory of tissue tension and cell autonomy explains adequately the destructive growth of tumor cells, and for this and other reasons the parasitic theory appears to be unnecessary besides being nowhere upheld by analogy in the animal or vegetable kingdoms.

Celery, states The Lancet, possesses but little nutritive value, over 93 per cent. of it being water with a little oil, the balance being made up of 3.5 per cent. starchy material, 1.5 per cent. of nitrogenous matter, 1 per cent. of cellular fibre and 1 per cent. of mineral salts. It is thus rather a condiment than a food; its flavor makes it popular; moreover its aromatic oil acts as a mild carminative and stimulant. This property may possibly account for cel-

ery eaten raw agreeing very well when taken with cheese. The difficulty of cheese digestion occurs in the stomach; when it is passed into the intestine digestion proceeds as easily and as completely as with meat. Carminatives (as certain essential oils) favor muscular contraction and thus also the continuity of the digestive processes; there would then seem to be no reason why the aromatic oil in celery should not be classed with the carminatives. This oil is allied to that of parsley or apiol, which is a well-known carminative, stimulant and diuretic. Celery is reputed to be "good" for rheumatism. An old recipe requires that the celery should be cut into bits and boiled in water until soft, and the patient should drink this water. "Put new milk with a little flour and nutmeg into a saucepan with the boiled celery, serve it warm with pieces of toast, eat it with potatoes and the painful ailment will yield." This procedure amounts to treatment with alkaline salts which so far appears to be rational. Celery contains sodium and potassium salts and also a distinct amount of iron; despite the presence of these substances there are many who find celery—especially raw—to be indigestible, which is not surprising, considering its stringy character. The best celery is crisp or brittle, but even so there is fibre present which cannot be appropriated by the human organism. Still vegetable fibre serves a useful purpose in stimulating intestinal movement.

Congenital Absence of Kidney.—Render (Lyon Medical, May 10, '08), reports a postmortem on a male infant of 17 months, who died of pneumonia following measles. In a sister who succumbed to the same disease at the same time no anomalies of the urinary tract or elsewhere were found on autopsy. The male child manifested during life no abnormality; but in his last illness had retention of urine for many hours, followed by frequent micturition (every ten or fifteen minutes) of a great deal of urine. The genitals, both external and internal, were normal, the testes well formed and of uniform size, the prostate lobes well developed. The right kidney was in its natural position, but was hypertrophied to twice its natural weight; it showed, however, no sign of disease and was surmounted by a normal and well-developed renal capsule. The right ureter opened into the bladder somewhat to the right of the median line, two-thirds of an inch above the neck (in some such cases the ureter opens in the median line). There was no left kidney whatever, whilst the left suprarenal body, somewhat hypertrophied, occupied its normal position. The vein of the latter resembled the left renal vein in its relation to the kidney; it received the left spermatic and an azygo-lumbar vein and joined the inferior vena cava at right angles. No trace of a left ureter could be detected. The bladder had no trigone nor any vestige of a left ureteral orifice; the right orifice showed no malformation. A supplementary spleen of the size of a cobnut and another, of a pea size, lay close to the hilum of the spleen. The remaining viscera and the limbs were quite normally developed. A colleague, discussing Render's specimen, stated that he once removed a kidney with a bulky tumor, after making sure there were two ureters, and his patient died of uremia; on another occasion, having

to deal with a large renal cyst which lay in the median line he drained the left side—fortunately as the kidney was found wanting. In such cases a segregator might be of service; the X-rays are not satisfactory for defining a horseshoe kidney.

Sewage Purification.—G. L. Travis (Brit. Med. Jour., Aug. 29, '08), defines and essays to prove the Hampton interpretation of the phenomena of sewage purification, which finds the process to be essentially one of desolution. The sewage impurities whether in suspension or in a condition of solution by this operation, are, as a preliminary effect, removed from the liquid as by a process of precipitation. This initial separation from the sewage of its solid constituents as particulate matters occurs under all conditions; it therefore constitutes the most important as also the most manifest effect in every treatment area. The correctness of any interpretation of the phenomena of sewage purification is evidenced by, and is proportional to, the fidelity of its adherence to these propositions. The complete operation of sewage purification is a complex one, in which physical, chemical and biolytic factors are severally engaged; the physical operation manifests itself in removing the suspended, and the more highly complex so-called soluble organic, as well as some inorganic, matters from the sewage, the chemical operation assists the physical in completing the desolution of the liquid, and takes its part in the subsequent changes induced by biolysis; the biolytic operation is concerned in a very minor degree with the sewage purification itself, its effects being almost entirely evidenced by the changes occurring in those substances which have been removed from the sewage rather than by being associated with those that are contained therein; the biologic operations on the deposited and absorbed solids, whether on those arising from the suspended or on those resulting from the "soluble solids" are always attended by huge, only partially reduced, and practically persistent accumulations. The physical and chemical operations of desolution manifest themselves by depriving the sewage of its impurities during the transit of that liquid through the artificial treatment area; and that the biolytic operations never find expression in the complete conversion of the deposited organic matters, nor indeed, could they do so were the area increased enormously.

Foreign Body in Stomach.—A curious accident to a physician is reported from Frankfort, Germany. An inmate of the Old Men's Home of St. John the Almoner died of haematemesis. In making the autopsy, the examiner received a severe incised wound from a new razor which the old man had swallowed and which had evidently caused his death. The patient had been demented and had long evinced a mania for collecting all sorts of articles. As his luck in trying to conceal them had been bad, and as there was no history of previous swallowing of foreign bodies and none aside from the razor were found in the alimentary canal, it is obvious that the particular obsession that led to his death was due to his acquisitiveness and not the usual one of a perverted instinct to tamper with the alimentary canal.

Origin of Vegetables.—The artichoke (*Revue Scientifique*, 1908), is the cultivated variety of the wild thistle indigenous to Madeira, the Canaries and Morocco. Its cultivation occurred early in various Mediterranean countries.

Asparagus is a native of temperate Europe and western Asia.

The origin of the aubergine, lima bean, lentil, pea, vetch and bean is doubtful, though the last appears to be American.

The carrot is indigenous to the whole of Europe, Asia Minor, Siberia, northern China, Abyssinia, northern Africa, Madeira and the Canaries. Celery possesses almost the same habitat. (Note—We have translated the word *Spontane* as indigenous. So wide a distribution probably is due to early Aryan migration.)

The chervil comes from the western, temperate part of Asia; parsley from the south of Europe and Algeria; sorrel from Europe, western Asia, the mountains of India and North America. (Note—Here, too, there is a suggestion of Aryan migrations, including that to America. The French sorrel, so widely used in soups, seems to be less acid and to have a different leaf from the ordinary American weed.) Spinach is supposed to come from northern Asia.

For a score of years, a new vegetable, the crosne, has been used (in France). It is a small tuber with delicate and savory meat, long cultivated in China and Japan.

The tomato comes from Peru, the cucumber from India, the pumpkin from Gunney.

(Note—The chief indigenous American vegetables are the potato, corn, bean, squash, yam. A sort of wild rice was also much used by the Indians. Other American plants of importance as food auxiliaries are chocolate and tobacco. It should be remembered that the word corn was originally synonymous with grain and is still used in the general sense in England. Corn is raised to a considerable extent on the continent of Europe but is very little used as food for human beings.)

Infectivity in Chronic Pancreatitis and Diabetes.—F. Hirschfeld (*Berl. Klin. Woch.*, March 16, '08), details the clinical histories of three cases, in which the symptoms of diabetes developed in connection with an infective process. Each of these patients was above forty and more or less nervous. The infection in the first and third cases was of influenza; in the second of febrile tonsillitis. The glycosuria in all three was of pancreatic origin undoubtedly, although Hirschfeld cannot say why the pancreas was affected by the infective process. Concerning others of his cases of diabetes he concludes: Cases of glycosuria which show all the signs of transitory pancreatitis occasionally develop in the course of infective processes, especially in those with a hereditary predisposition to diabetes. Swelling of the liver is noted during the period of sugar excretion, and this disappears with the glycosuria. The infection is probably brought about through the blood and affects the pancreas and liver. The hepatitis tended to clear up, and the same seemed at first to be the case with the pancreatitis; but later on the diabetes

returned, and assumed a more chronic course, indicating a transition from the acute into the chronic stage of the pancreatitis. Diabetes seems mild in alcoholics and in syphilitics. Cirrhosis of the liver would thus seem to have a beneficent effect on the course of diabetes. One would, by analogy, consider that there is ample evidence to accept the transition from acute to chronic pancreatitis, just as the transition from acute to chronic hepatitis takes place. It has hitherto been possible to trace the connection between infection and pancreatitis; but further investigation may perhaps widen the knowledge of this connection and throw fresh light on this origin of glycosuria and diabetes.

The crusade against alcohol has perhaps been a little "intemperate" and sometimes the work of zealots and over-enthusiasts, but nevertheless agitation of the matter in its various phases has doubtless been productive of good results. It has served another purpose, too, in that it has caused the whiskey and distilling interests generally to get exceedingly busy in the effort to stand off the encroachment upon their lives. Some of the literature they put out is a brazen attempt at a justification of whiskey and beer drinking, and they would have us believe that booze is a good thing for everybody every day. They would have us believe that overeating produces more disease and suffering than the excessive and improper use of alcoholics. This is lame argument and in no sense can it be taken as a justification of the use of alcoholic beverages even though some people do overindulge their stomachs. Dyspeptics may be slightly more numerous than dipsomaniacs, but society has less to fear from the former. Dyspepsia does not fill our penitentiaries and insane asylums, while we are very well informed of the fact that whiskey is very instrumental in doing this. The crusade against liquor got its first great momentum from the commercial world and not from moral and scientific quarters. The vaporings of the temperance crank have usually fallen on stony ground because of his "intemperate" and often erroneous utterances. But we learned from the business world that the drinking of alcoholic beverages is a bad thing. The surgeon who indulges even quite moderately (to his way of thinking) for a few years in strong drink finds that he has too shaky a hand for skilful handling of the scalpel. The prizefighter found it was the wise thing to do to cut out every drop of booze while undergoing his arduous course of training preparatory for a slugging match. He learned from experience that alcohol did not give him strength and "nerve." Railroads then began refusing to employ men who drank even moderately, realizing that such may at any time be graduated into immoderate drinkers. The railroads were not guided either by moral or altruistic motives, but simply acted on the basis of self-protection. It was detrimental to their business to have drunk men killing people for them. Other firms employing men where skilful hands and clear brains were required, together with moral responsibility and physical endurance, began to let the drinking man down and out. We learned incidentally that a large percent of poverty, crime and even insanity is due either directly or indirectly to whiskey. The evils resulting from excessive drink

are protean and far-reaching in their manifestations, and this is a fact so palpably plain as to need only mention in passing. One of the strong arguments(?) couched in elegant language, interspersed with rhetorical figures, as an attempt to justify the promiscuous and ever-constant use of ardent spirits is the buoyancy of "spirits" thus created at the social board, this being considered a great aid to digestion and conducive to physical and mental well being. This needs no comment. Most right-minded people like good eating and social enjoyment, but they also like to have their senses with them and knew what they are doing. The writer knew a couple of young men who visited the World's Fair at St. Louis and straightway got drunk and said there was nothing there worth seeing, so they came home. There can be produced no argument that will to the minds of intelligent people justify the indiscriminate use of alcoholic beverages. We tolerate these things, and though we should indulge in them ourselves we can at best only palliate their use and do not attempt to justify them. When the alcoholic cohorts attempt to make the people, doctors included, believe that whiskey and beer are good things for everybody they are creating utterances that are diabolically false and which should not go unchallenged.

But a question upon which there is a good deal of opinion, pro and con, is that concerning the value of alcohol as a therapeutic agent and whether there is anything that will take its place. Alcohol has a certain therapeutic worth that can not be gainsaid, but in view of the mischief that it has wrought and is ever wreaking, conscientious physicians often have a hesitancy about prescribing it just as they may hesitate to stick a hypodermic needle into a patient the first time. They can not see the end. Alcohol is a drug and should be handled and employed in the same manner as cocaine, morphine, chloral hydrate and all other narcotic or habit-producing drugs. Alcohol should be used only when specially indicated, which may sometimes be a matter of speculation. When the heart and circulation are struggling hard and overtime to overcome the results of certain toxins alcohol may do good in that it plays the double role as a cardio-respiratory stimulant and a toxine neutralizer. Puerperal septicaemia, the crisis of pneumonia and several other conditions of analogous nature may be benefited by alcohol in some form. There may be times in typhoid fever when it is indicated. Diphtheria is usually benefited by it. There are severe acute conditions in which there is a peculiarly great tolerance to alcohol and large quantities can be ingested without signs of intoxication. On restoration to a normal state of health this tolerance no longer obtains. On the other hand we have the risk to run in some cases of the patient being left with a susceptibility to the habit for it. If alcohol acts favorably as a therapeutic agent the following conditions will ensue after its administration: There is a tendency of the pulse and circulation to become steady and more normal; nervousness is dispelled and the sleep that follows is quiet and devoid of brain agitation; the appetite is increased and the patient is not left with the "dark-brown taste" and the "morning after" symptoms, but on the contrary the secretions are moistened;

the breath does not emit the fumes in a marked manner; there is no disturbance of the heart's action; the mental and nervous condition of the patient are improved with no unfavorable reactionary effects; on the whole, the patient is made better and not worse. If in any considerable measure the opposite of these conditions take place after giving alcohol in any form, it is not calculated to do the patient any good and would be better left off.

Pharmaceutical houses up to the last year have been multiplying very rapidly and their products are for the most part a representation of skill and conscientious effort. While the greater number of the "new" and "newer" products bidding for patronage are exact from a physical and chemical standpoint and are possessed of therapeutic worth of a high order, yet we should not entirely pass up the **old-time remedies**. In many of the old drugs that have been in use since the time when the world was a good deal newer than it now is we have very trustworthy agencies, although not always marked by their elegance and palatability. However, some of our derivatives and analogues when transformed into agreeable looking and tasting preparations are robbed of some of their therapeutic value. Some of the old stand-bys can be made neither elegant in appearance nor pleasing to the palate. Castor oil is one of these, the claims of the "tasteless oil" promoters to the contrary notwithstanding. Castor oil is disagreeable, but what of it? The nastiness of a remedy sometimes augments its value by the way of suggestion. Castor oil is as old as the pyramids and more, too, but its value does not diminish with the march of years. It is our ideal cathartic, particularly for children. It is not a bad thing for adults. Many tough old cases of headache are permanently relieved by a course of castor oil. Epilepsy dependent upon intestinal debris and its absorption is sometimes cured by oil treatment. In typhoid fever or any other condition in which there are scybala in the small bowels oil melts away these lumps as nothing else does. Anemia in young women often depends upon a condition of this kind and castor oil treatment is more efficacious than iron. Whenever there are accumulations anywhere along the intestinal canal this old-fashioned remedy is indicated. Castor oil contains an active principle, but for the most part its action is mechanical. There are more than fifty ways of taking oil with ease and facility, although none of them are perfect or the methods would not be so numerous. Perhaps beer or whiskey covers the taste for adults as well as anything, and the vehicle seems to quicken catharsis. For children essence of peppermint or cinnamon helps to cover the taste tolerably well. A little ice held in the mouth before taking the oil renders the taste bulbs in a somewhat inhibitive state and makes the medicine go down better.

Swedenborg's Contributions to Science.—Although the name of this great man is chiefly associated in thought with theological matters, it would seem that his scientific achievements were of the very first importance. It is declared that many modern discoveries and theories were anticipated, or at least adumbrated by him. Mr. Thomas French, professor of physics in the University of Cincinnati, has made

an enumeration of these achievements. The following doctrines of modern science of are stated more or less definitely in Swedenborg's "Principia," published in 1734: The atomic theory, the solar region of the earth and her sister planets; the undulatory theory of light; the nebular hypothesis; the doctrine that heat is a form of motion; the averment that magnetism and electricity are closely connected; the definition of electricity as a form of ethereal motion; and the theory that molecular forces are due to the action of an ethereal medium. Mr. J. D. Morrell, in his *Historical and Critical View of the Speculative Philosophy of Europe in the Nineteenth Century*, "declares that the records of Swedenborg's scientific studies exist to the present day in the form of volumes and tracts" which travel over the whole surface of natural history and science, and in which it is only just to say are found more or less obscurely disclosed many of the germs of recent and brilliant discoveries. In the Introduction of his *Principia* Swedenborg has some remarkable passages relating to what is now known as evolution. Herbert Spencer is usually credited with the conception that the motions of the ether have much to do with the production of the sense of sight. Swedenborg clearly propounded this theory: "The ether seems to have formed in the eye a mechanism of its own by which its vibrations can be received." Still more noteworthy is his statement regarding the ear: "The undulating air flows into the ear and occasions in its tympanum a motion imitative of itself, so that it seems to have found a mechanism of its own." And in another place: Man is made after the motion of the elements, a saying that seems to sum up the Spencerian theory. Among the important physiological principles announced by Swedenborg is the influence of the respiratory movements on and their propagation to the viscera and the whole body. He was the propounder of the law that the body in general and in particular respire with the lungs and that the perpetuation of all the functions, and in a word, of corporeal life, depends on the universality of this action. Another principle seemingly discovered by Swedenborg was the permeability of membranes and the circulation of fluids through them in determinate channels—the endosmosis and exosmosis which are supposed to be discoveries of our generation. Much in advance of his age as Swedenborg was in this field, his physiological studies were only undertaken as a basis for his psychological speculations.

Diseased Conditions Caused by Mouth Breathing.

—G. H. Spohn (*Diet. & Hygien. Gaz.*, Oct., 1908), considers that all respiration should be nasal: at birth the child's respiration is nasal and not oral; man is the only animal that becomes a mouth breather; nasal breathing will prevent diseases of the respiratory mucosa; oral breathing will cause mucous membrane affections; oral breathing becomes a habit (when the fault lies in the brain), or a necessity (by reason of obstructions in the respiratory passages). In adults the proper mental impulses will correct the habit; in children the habit can be stopped by suggestions and by wearing a "mouth breathing" device. The nose and throat should be freed of all obstructions; diseased tonsillar tissue in the post-nasal and pharyngeal spaces should be removed, as also neoplasms, hypertrophies, exostoses,

deviations, etc. Every case of mouth breathing can be cured and most cases can be improved.

Gastric Ulcer.—Greene (*St. Paul's Med. Jour.*, June, 1908), finds medical and surgical statistics to be misleading and faulty; deplorably much operative work has been done in purely medical cases; in most instances neither before nor after operation has there been a proper scientific use of modern diagnostic or therapeutic procedures. Simple ulcer is always medical; chronic ulcer is only surgical when persistently recurrent. Cases of moderate stasis and pylorospasm are not primarily surgical. Hemorrhagic cases are seldom fatal and yield a lower mortality under medical than under surgical treatment. Surgical relief is advisable in painful perigastric adhesions resistant to medical measures. Perforation is a purely surgical condition. Proper medical treatment and after-control reduces recurrence to a minimum. The absence of this control in public clinics permits and justifies a freer recourse to surgery than would be permissible in private practice. There is but a negative mortality in properly controlled private cases. The rigid plans of treatment and time divisions are an absurdity; the practitioner should be governed by a knowledge of the fundamental principles involved, the clinical course, known conditions as to gastric secretion, and still more the mortality and the patient's individuality. Absolute rest, mental and physical, the wise employment of alkalies, proper nourishment (demanding little of motility and secretion, exciting a potent digestive fluid rather than a profuse one, easily assimilable and nutritious) and proper psychotherapeutic control comprised all the measures usually found necessary. Hospital care and the services of a trained nurse are of great importance. Patients should be kept under direct observation and control at least one year. Results should be reported after five years. Cure is not complete until all local tenderness, rigidity, and pain are relieved, blood absent from the stools, and the previous best weight of the patient regained. The requirements on the surgeon's part should be quite as definite; and in both the claim to cure should be tested by a long immunity period.

Diagnostic Reaction with a Tuberculin Ointment.

—Moro (*Munch. mediz. wochenschr.*, Feb. 4, 1908), has induced a specific reaction by means of an ointment of anhydrous lanolin containing fifty per cent. of old tuberculin; he has found this to retain its efficacy for months if it be kept on ice. Ten grammes suffice for about one hundred tests. The skin of the abdomen just below the sternum is selected; or, if this be not free of cutaneous lesions, application is made in the mammary regions. Over an area about five centimetres in diameter is treated; and a portion the size of a pea is innuncted with the finger, moderate pressure being used for half a minute; the skin is then left uncovered for about ten minutes; no dressing is applied. In negative cases there is no reaction; a positive result is manifested by a papular eruption. There are three grades of reaction: a weak reaction in which from two to ten solitary, small, pale papules appear in from one to two days; a medium reaction, in which a hundred or more miliary or larger red papules (which may measure in diameter three millimeters) will appear during the first

day, the skin in their neighborhood being moderately reddened, the eruption being, however, confined to the site of the inunction, itching slightly, remaining unchanged for days and then slowly fading; a strong reaction, numerous itchy red papules, in diameter from five to eight millimeters, with inflammatory base, appearing within a few hours, there being exudation in some of which; the eruption not being confined to the site of inunction, but extending well to the surrounding parts. In a few days the papules desiccate and become scaly; in two weeks nothing is left except a brownish pigmentation. None of these forms of reaction is accompanied by general symptoms or elevation of temperature. Moro believes the reaction to be strictly specific, though somewhat less sensitive than those of von Pirquet or Calmette; its diagnostic value must be determined by further observations in a large series of cases; it is at any rate entirely harmless, even the itching at the site of the inunction being comparatively rare.

In treatment of the ear don't pour hot oil into the canal to relieve pain (Am. Jour. Surg.). Heat can be applied much better in a hot mixture of glycerine, alcohol and water, which will not clog nor turn rancid and which can be removed by syringing with water. A towel or large pad of gauze wrung out in boiling water, and closely applied over the ear, covered with oil-silk or protective "rubber tissues," is better than a hot water bag. Sudden, one-sided diminution of hearing after bathing may indicate nothing more serious than water in the ear or a plug of wax which has swelled up and obstructed the canal. If no means of syringing is at hand, the instillation of ether and alcohol (a. a. p. a.) will dry up the plug and often cause it to disintegrate with corresponding improvement in hearing; swollen seeds, peas or beans in the external canal (a frequent occurrence in children) can be treated similarly.

"Consumption in the family."—The Tuberculosis Committee of the N. Y. State Charities Aid Association reports how a healthy looking girl of about twenty stated: "My father and mother died of consumption a long time ago; my brother died last year; I have two more sick with it and I expect to die with it myself some day. It's in the family." It is well observed such hopeless submission to a family fetish of supposed inherited consumption is one of the greatest obstacles to a successful fight against this disease. "When a person with 'consumption in the family' is told 'it isn't your family that has consumption, it is your house, and you can get it out of your house and out of your family at the same time, the statement is met with almost unbelief."

Sewage and Tuberculosis.—S. G. Dixon (J. A. M. A., Aug. 1, 1908), to determine whether the tubercle bacillus can so contaminate water courses and water supplies as to imperil the public health, has had bacteriological examinations made of the sewage from the Rush Hospital for Consumptives in West Philadelphia, and from the White Haven Sanatorium, and of the mixed sewage from the South street bridge outlet in Philadelphia. From the first two of these sources tubercle bacilli or typical acid fast bacilli were obtained in small numbers; but none were obtained from the South street bridge sewage. Inoculation experiments on guinea pigs, however, failed to produce the characteristic lesions; but this would

not prove that the acid-fast organisms were not tubercle bacilli. The fact that no tuberculosis was produced does not argue against the assumption of their identity because of the small number introduced. Experiments performed to determine the effects of sunlight showed that more time is needed to kill the sewage organisms than would suffice to restrain the growth of the tubercle bacilli; and that the technique used (with eosin) was therefore impracticable. Dixon and his colleague Fox will continue their researches; the determination of tubercle bacilli in sedimented sewage of tuberculosis is, however, sufficient proof that these organisms are present, and may therefore be in the water courses into which such sewage flows.

The Origin of Endogenous Uric Acid.—E. P. Cathcart, E. L. Kennaway and J. B. Leathes (Quar. Jour. Med., July, 1908), do not agree with Hirschstein, whose theory is that the diminution of the excretion of endogenous uric acid during the night is due to retention during sleep. They found the administration of calf's thymus at night to be followed by just as prompt an excretion of this exogenous uric acid as when it was given during the day time; also that in fever following typhoid vaccination the endogenous uric acid excretion rose and fell with the temperature; that exposure to cold caused a similar increase which, however, outlasted the exposure; and that severe muscular exertion causes a temporary decrease followed by an increase which lasted a day or two. It would seem that in all three of these conditions the uric acid has its origin in metabolic processes, occurring principally in the voluntary muscles and not immediately related to voluntary contractions and work.

Goitre in the New-Born.—Favre and Thevenot (Rev. A. Chir., June 10, 1908), have found 130 recorded cases. The symptomatology is much as in adults; exothyropexy (section of the isthmus) gives good results, relieving the threatening compression of the air passages, but leading, however, to the retrogression of the goitre. An inherited tendency was observed in a number of cases. Preventive treatment is essential—general hygiene, iodides—when a woman with goitre or with goitrous children becomes pregnant. Medical treatment should be given the infant upon its birth; surgery is necessary if difficulty in breathing continues despite attempts to relieve the thyroid congestion. Tracheotomy should never be considered. The goitre may be severe or mild or fulminating; the mild form is much the more frequent. Parental syphilis was scarcely ever noted, nor could signs be found in the children later. The water drunk by the mother may be responsible for the infantile goitre; though predisposing causes may be provided by persistence of the fetal circulation, compression during delivery and congestion from screaming or writhing.

Medicine is absorbed, states the British Journal of Nursing, through five channels; the stomach, the rectum, the cellular tissue (subcutaneously), the skin (by inunction), and the lungs (inhalation). The length of time required for the absorption of medicines depends on the solubility of the remedies, the method of giving and the state of the circulation. Hypodermic injections are absorbed ordinarily within five minutes, as they enter directly into the circu-

lation. Owing to the large number of pneumonic blood vessels medication by inhalation will be speedy—from five to ten minutes. The average time required for gastric absorption depends on the state of the stomach and the nature of the medicine; absorption is more rapid on an empty than on a full stomach. Solutions are more readily assimilated than powders and pills, because the latter must first be dissolved; and alcoholic solutions will probably be absorbed in quicker time than those made with water or other liquid. Rectal absorption is slowest, requiring three-quarters of an hour.

The Body's Defenses.—Cheyne (Lancet, June 27, 1908) dwells only upon diseases due to parasitic infection, referring especially to the differences between children and adults. Some diseases occur practically only in childhood, whilst others common to adult life hardly ever affect children; and there are many infections attacking both adults and children, to some among which the young are more susceptible, to others among which the elders are more prone; again, some of these diseases are more virulent in children than in adults, and vice versa. Cheyne especially observes that in diseases common to both adult and child, the organs and tissues attached may differ markedly according to the patient's age. The exanthemata, for example, are often spoken of as children's ailments; the pneumococcus finds the tissues of the young less resistant than those of adults. The first line of defense resides probably in the epithelial tissue; there is clearly "a local power residing in the epithelial cells themselves, or in the fixed cells on which they are situated, rather than in any general condition such as the presence of opsonins in the blood. Children are more susceptible to the gonococcus than adults, which in the former attacks epithelial tissues that in adults are more or less immune. Impetigo and multiple skin abscesses are common in children, but not boils; the reverse obtains among adults. The second defensive arrangement is the endothelium, the weak spots in which are fixed upon by the bacteria; for example, endarteritis is common in syphilis. The local predisposition may be contributory. Ringworm of the scalp is common between the third and the fifteenth years; but before and after this period it is rare; possibly there is a difference in the chemical composition of the hair of adults and of children. Thread worms are common in children, but equally rare in adults; this may be due to a difference in the secretions of the alimentary tract. Bacteria of the same species may have a special appetite for certain tissues; for fresh developments are apt to occur in an individual in connection with given tissues. That the anatomic arrangement of various parts favors the deposit of germs can hardly be accepted as the only, or even as an important factor. Cheyne sums up disease localization under the term local predisposition; he has been unable to find any marked differences in the opsonic index to different organisms at various life periods, corresponding to the variations to the incidence of disease and in their course at different ages. No difference in the opsonic index to various infective organisms has been pointed out as regards sex; yet there are noticeable variations in the severity and severity of these diseases in the two sexes.

The cutaneous tuberculin reaction in children is

sought by J. M. Comby (Lancet, June 27, 1908), as follows: Instead of the 25 per cent. solution of von Pirquet, he uses the one per cent. solution of tuberculin of the Pasteur Institute, such as is used also for the oculoreaction. Instead of scarifications, which are a little painful and to which children may object, he makes three pricks with a vaccine lancet in the deltoid region, telling the patient that he is going to vaccinate him; on the next day and the day after that he observes the results. If there is no reaction only traces of the prick can be seen—three small black spots without surrounding redness. If the reaction is positive (after twenty-four hours or perhaps a little later), there is a more or less intense redness around the pricks. This is followed by papules which last from eight to ten days. Several degrees of reaction can be distinguished: (1) slight redness—simple erythema; (2) red papules—papular erythema; (3) red papules with vesicles; (4) red papules with bullae; and (5) red papules with central eschar and a ring of vesicles resembling anthrax—papuloneurotic erythema. The last three forms, especially the last two forms, are very rare. None of the reactions are serious, or produce adenopathy or fever. Complete recovery takes place in one or two weeks. This reaction is applicable to all ages and in all forms of tuberculosis. In the immense majority of cases "the cutaneous, like the ocular reaction, is positive only in tuberculous children and is negative in those free from the disease. However, in cases of subacute infection (granulic), and in cases of advanced pulmonary tuberculosis the cutaneous type, like the ocular, may be negative. Sometimes the cutaneous reaction is negative in a patient who is very ill; but becomes positive when he improves (when the temperature falls strength is regained, and the pulmonary focus dries up. Conversely, when the reaction is positive while the child is fairly well, it becomes negative when he becomes ill. The negative reaction in advanced tuberculosis is not an important drawback to the method; the important point is to recognize tuberculosis in its initial stage, when the reaction is of service.

Diseases of the Conus Medullaris.—Rabinowitch (Berl. Klin. Woch., Aug. 31, 1908), divides the clinical symptoms in three groups: anesthesia of the urethra and rectum, loss of the voluntary innervation of the bladder and rectum and impotence; anesthesia of the genitals, of the perineum, of the anococcygeal region and of the neighboring portion of the nates; loss of the reflex of the right tendo achillis.

Unnecessary Noises.—Health Commissioner Darlington has advocated before the Board of Aldermen a measure that purposed to make all unnecessary noises unlawful and to place the suppression of them in the hands of the police. This seems better than the rule heretofore in vogue which was alleged to operate only against noises that are a public nuisance and an injury to health. It is well observed that in a big city there are always noises enough that cannot under any conditions be wholly obviated. Needless noises would, on the ground taken by Dr Darlington, be dealt with for the reason that they are needless and therefore objectionable; under such ruling, moreover, the burden of proof that noises cannot well be avoided would be with the offender.

MISCELLANY

For opening the membrana tympani an old, narrow Graefe cataract knife is an ideal instrument (*Am. Jour. Surg.*); ethyl chlorid narcosis is the best for this brief operation.

In administering an anesthetic avoid touching the cornea (*Am. Jour. Surg.*). The ocular reflex can be obtained just as well through the lids; and the pupils and motions of the globe offer the most definite indications of the degree of narcosis.

1001 Cases Analyzed.—It is reported that from statistics of this number of cases of women who fainted within the year now ending, 987 fell into the arms of men, two fell on the floor and one into a water-bath. The consequences in the last three of these cases were probably not serious.

A New Bellevue Hospital Building has been opened for patients. There are now in the whole institution nearly nine hundred patients with room for three hundred more. The new building is at the southeast end of the grounds; and another new building is almost completed at the northeast end.

Professor Laveran.—The J. A. M. A. states that almost the whole medical profession of Algiers has united in placing in the military hospital of Constantinople, on the spot which served Laveran for a laboratory, and where he accomplished his memorable works, a medallion commemorating the discovery of the *plasmodium* in 1880, which, together with other great works, won for him the Nobel prize in medicine last year.

Cardiovascular Prognosis.—H. W. Cook (J. A. M. A., Nov. 14, 1908), believes the combined cardiovascular diseases constitute the largest element in general mortality, and are even more important elements in insured mortality; the evidences of incipient cardiovascular disease are in many cases discoverable by carefully detailed examination; greater care and thoroughness in this particular would produce a large saving in insurance mortality, especially during the first five years.

The X-ray Treatment of Exophthalmic Goitre.—G. E. Pfahler (*N. Y. Med. Jour.*, Oct. 24, 1908), finds that decided improvement may be expected in 75 per cent. of the cases; this improvement consists of an increase in weight and strength, and gradual disappearance of the Basedow symptoms; some improvement should be noticed within a month, and after six to a dozen treatments; when this treatment is properly given there appears to be no danger, nor any objection for at least trying the treatment for a month.

The Diet of Nursing Women, reports the New York Medical Record, is regulated by L. Bouchacourt in such a way as to produce the most milk and of the best quality. The diet must be abundant and of good quality; but vegetable matters should predominate, meats being less important as milk formers. Oils are also valuable. The vegetables giving the best results are lentils, peas, beans, beets, chicory, parsley, cottonseed oil cakes and carrots. Cod-liver oil is also valuable; plenty of milk, butter and cheese should be given daily; as also plenty of liquids—light beers, ales and ciders have galactagogue properties.

Headache of Nasal Origin.—A. I. Weil (*N. Orleans Med. & Surg. Jour.*, Aug., 1908), finds the pain to be due to one of five causes; pressure of the hypertrophied or swollen parts upon the septum or upon each other, especially of the middle turbinate upon the septum; hyperesthesia of the mucus membrane; acute congestion or inflammation of the Schneiderian membrane; retention of pus under pressure; disturbance of the blood and lymphatic circulation at the base of the skull, especially when there are adenoids.

Placental Transmission of Typhoid Bacilli.—B. A. Cohoe (*Am. Jour. Obst.*, June, 1908), reports a case of abortion during an attack of typhoid fever. The foetus, with membranes intact, was sent to the laboratory; cultures were taken from the amniotic fluid and fetal viscera, and from these structures typhoid bacilli were obtained in pure culture. Cohoe believes it must be conceded that a fetal infection can take place only through the medium of an injured placenta; and that such injury may exist prior to the disease, or may result during the course of the disease from the active toxins of the circulating blood of the mother.

Rheumatic Hyperexia.—T. E. Meybor (*Lancet*, Oct. 3, 1908), relates the case of a boy of nine with a seven weeks' history of stiff neck and slight leg pains. Examination revealed a presystolic initial murmur with a flaccid and paralyzed arm. The condition continued four days without change; when the boy suddenly developed stertorous breathing and became comatose. The temperature was 109 degrees F.; the pulse uncountable. The patient died in an hour with a temperature of 110 degrees F. Meybor notes the variety of hyperpynexia during acute rheumatism in children; and its greater frequency in first attacks and in those which run a mild course.

Infantile Paralysis.—Lovett and Lucas (J. A. M. A., Nov. 14, 1908), believe this to be a less formidable affection than is generally supposed; partial paralysis is common; disused and stretched muscles appear to be paralyzed, but possess a possibility of function. In addition to mechanical treatment an attempt should be made—by massage, electricity and especially by muscle training to wake to activity the remaining cells in partly destroyed groups and thus to secure muscles which perform function. After tendon transfer, the development by muscle training of the transferred tendons is essential to good results, and without this the percentage of failures will be large.

The Anesthesia Commissioner of the American Medical Association.—In the preliminary report (J. A. M. A., Nov. 7, 1908), it is recommended: For the general practitioner and for all anesthetists not specially skilled, ether must be the anesthetic of choice—administered by the open or the drop method. The use of chloroform, particularly in minor surgery, should be discouraged, unless given by an expert. The training of skilled anesthetists should be encouraged; and undergraduate students should be more generally instructed in the use of anesthetics. The further use of nitrous oxide, combined with air or oxygen, is considered by the committee in major surgical operations to be promising.

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- Beck, A. K. A Reference Hand-Book for Nurses. 375
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- Bickham, W. S. A Text-Book of Operative Surgery. 342
- Boericke, F. A. The Elements of Homeopathic Theory, Materia Medica, Practice and Pharmacy. 55
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- Brubaker, A. Text-Book of Human Physiology. 249
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- Dana, C. L. Text-Book of Nervous Diseases and Psychiatry. 343
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- Foote, E. M. A Text-Book of Minor Surgery. 56
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- McMurrich, J. P. Atlas and Text-Book of Human Anatomy. 54
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- Proceedings of the Royal Society of Medicine. 152
- Quain's Elements of Anatomy. 279
- Rodman, W. L. Diseases of the Breast with Reference to Cancer. 151
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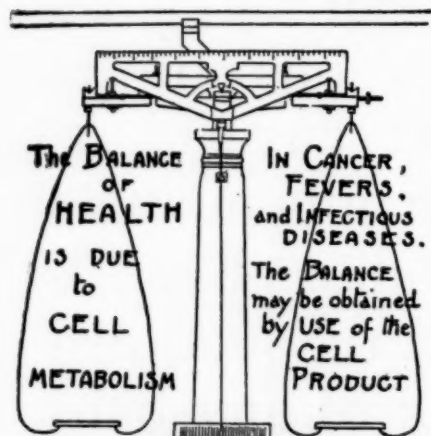
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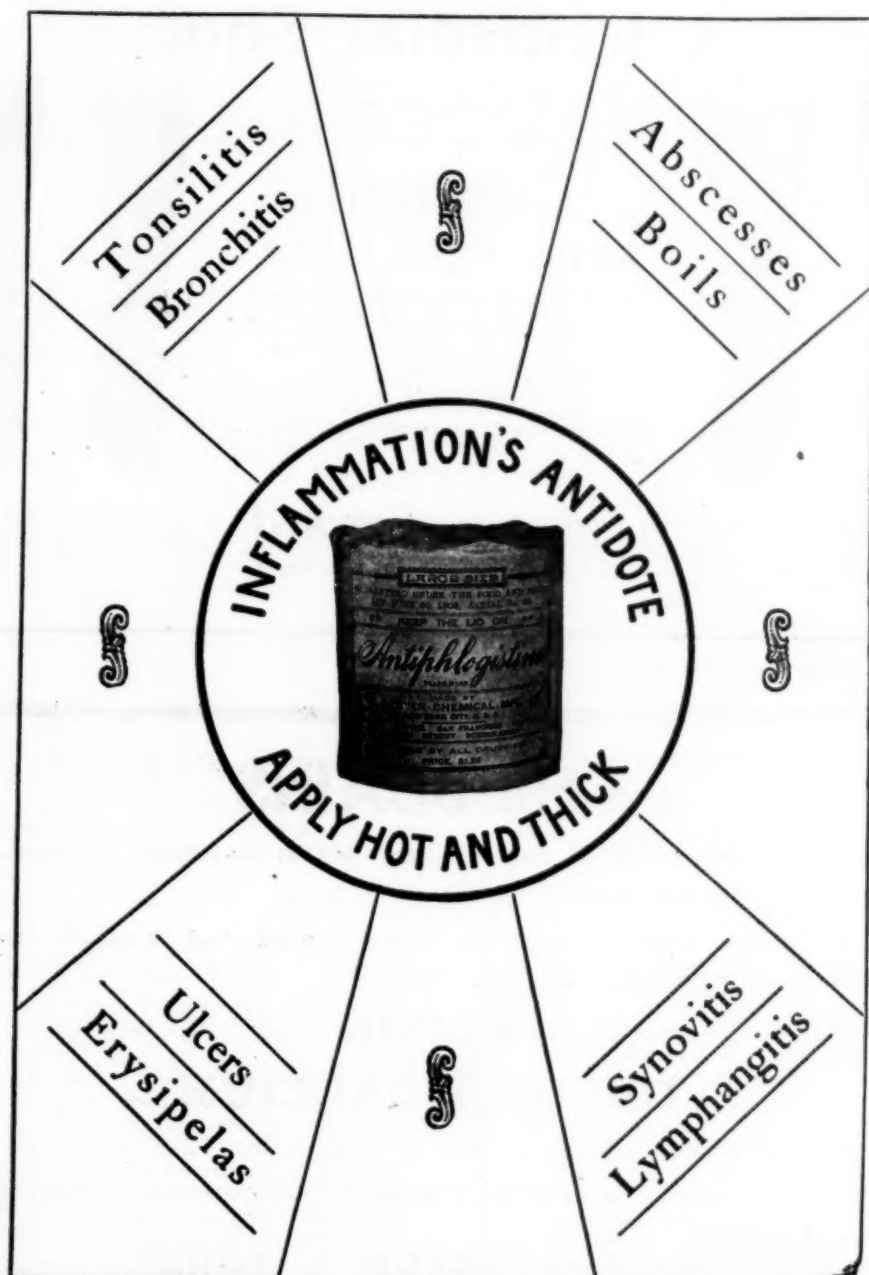
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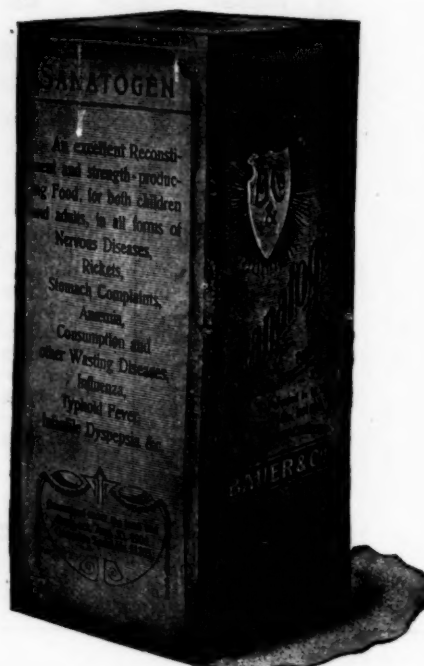
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Genito-Urinary Diseases and Syphilis, by Edgar G. Ballenger M.D., Lecturer on Genito-Urinary Diseases, Syphilis and Urinalysis, Atlanta School of Medicine, etc., with 86 illustrations; pp. 276. Price \$3. E. W. Allen & Co., Atlanta, Ga.—This is a most concise and excellent little book intended for the student and the general practitioner. It answers its purpose well.

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SELECTIONS

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Fermenlactyl and Its Application in the Treatment of Infections of the Nose, Ear, Throat, Urethra, Vagina and Skin.—By W. H. Walsh, M.D., Philadelphia, Pa., Late Chief Sanitary Inspector, Insular Board of Health, Manila.—The value of the stronger lactic acid producing bacilli in the treatment of auto-intoxication and indicanuria is well established and is being largely used as an indirect antiseptic of the gastro-intestinal tract by the more progressive members of the profession, since the principle was suggested by the work of Metchnikoff and others. There is however good reason to hope that this form of medication may be extended to a number of diseases caused by bacteria and a new field of usefulness is opened since it has been discovered that pathogenic secretions of the nose, the ear, the throat and other cavities yield to the application of concentrated fluids containing Bulgarian lactic acid bacilli prepared from pure cultures of the streptobacillus lebei and of the casein ferment found in the compressed tablets of Fermenlactyl.

When a liquid containing these bacilli is sprayed into these cavities, it destroys the pathogenic and saprophytic bacteria with which they come in contact in a remarkably short time and many forms of chronic catarrh, suppurative otitis media, ethmoiditis, atrophic rhinitis, empyema of the frontal sinuses or antrum, ozena, etc., yield to this treatment.

It is therefore indicated as a local treatment of influenza, muco-purulent secretions of the urethra and vagina and in certain obstinate skin diseases.

Clinical experience with cases in which this treatment has been used intelligently, shows that success has been obtained almost without exception, and in all there was marked improvement even in the most chronic cases.

The difficulty of bringing the bacilli in situ is not so great as may be supposed, because the bacilli will proliferate within the cavities and find a culture medium in their secretions and thus penetrate where it is impossible to apply local remedies.

The technique of their application requires some little study, however, since each case must of necessity be treated according to the conditions, but as a rule, the mere spraying of the bacilli in suspension is sufficient.

Such cultures must of necessity be prepared by the physician himself, until our pharmacists have become proficient in preparing them commercially and freshly, but there is no great difficulty in doing this. Culture broths of peptone and glucose serve the purpose and such sterilized broths can be implanted with Fermenlactyl so largely used for making Bulgarian sour milk.

The clear fluid of Fermenlactyl buttermilk itself answers well for this purpose and is especially pleasant for nasal affections, since the bacilli will soon proliferate and reach the turbinates and ethmoid cells and accessory cavities when given the opportunity.

A rich culture of the lactic acid bacilli can be made as follows:—Take 500 c.c. of pure milk, remove the cream, add 10 grammes of cane sugar and boil for one-quarter of an hour. Cool to 42 degrees C. and add one tablet of Fermenlactyl (crushed). Keep in a water bath at exactly 42 degrees C. for ten hours, by which time the buttermilk will have become thick and creamy. Now put the Bulgarian Sour Milk in a refrigerator until a fluid separates and syphon off the clear liquid from the bottom, or the buttermilk can be passed through a sterilized piece of flannel to obtain the limpid fluid, rich in bacilli, sugar and peptones.

This can be injected with a syringe or used as a spray. This culture is preferable to the artificial bouillon cultures and less repulsive to the patient, since it has a delightfully fresh nutty odor if carefully prepared.

The Colorado Souvenir Book for the International Congress on Tuberculosis has been issued, and is being distributed free to the members of the Congress. Others may obtain copies by addressing the Exhibition Committee, 823 Fourteenth Street Denver, Colo., at the nominal sum of twenty-five cents to cover postage, etc.

The pamphlet contains about two hundred pages of valuable information, including climatic maps and tables of statistical data, based on the reports of the Weather Bureau.

Those desiring such information will do well to obtain a copy.

SELECTIONS

The Influence of Urotropin on the Urine.—Interesting findings are reported by Professor Richard Stern in the *Zeitschrift f. Hygiene u. Infektionskrankh.*, Vol. 59, 1908.—With Urotropin a liberation of formaldehyd or aniseptically-acting formaldehyd compounds best takes place in acid urine. A urotropin urine with alkaline reaction is less antiseptic. By "alkaline" urines Stern means urines to which sodium bicarbonate has been added. There is therefore no contradiction between his experimental results and the clinical observation that urotropin acts well when the urinary reaction is alkaline. For a clinically alkaline urine means one which has undergone ammoniacal decomposition—one which is acid in the kidneys and is only in the bladder infected with uric acid-decomposing bacteria. For the practical employment of urotropin it is important not to weaken its action by simultaneous free administration of alkalies.

Though free flushing of the urinary organs is rightly regarded as an important therapeutic measure, it involves diluting the antiseptic in the urine. Therefore, when the dose of urotropin can not be proportionately increased, the patient should be ordered to drink large amounts of liquids throughout the day, while large doses of urotropin are given morning and evening.

Deep-seated inflammatory processes of the bladder, renal pelvis, etc., are less amenable to urinary antiseptics. In tuberculosis and other deeply-penetrating infectious processes, a cure can not be attained with urotropin. The remedy is, however, of service by restraining bacterial development in the urine and alleviating the irritating action of the urine on the diseased mucosae.

Stern thinks urotropin is by no means used enough before and after instrumental procedures on the urinary organs. Urotropin in large doses uniformly distributed (60 grains a day in 3 to 6 doses) should be given in all cases in which obstructed urination favors infection, before and after the introduction of instruments (catheters, cystoscopes), and before and after gynecological or surgical procedures in which injury or contusion of the bladder may occur.

Stern recommends a large dose late at night, to render the nocturnal urine antiseptic. Otherwise much of the success attained during the day is negated during the night.

In phosphaturia, says Stern, urotropin acts when the excretion of urine turbid with earthy phosphates is due to ammoniacal fermentation. His cases of this class were mostly of preceding gonorrhea in which secondary staphylococcus infection occurred. In neurasthenics, who often suffer from hyperacidity and constipation and therefore freely take alkaline waters and vegetables and salts, the food alone may suffice to produce an alimentary phosphaturia. Here urotropin is unavailing. But when the urine of such patients is weakly acid or neutral, a moderate formation of ammonia or uric acid-decomposing organisms suffices to induce precipitation of earthy phosphates. A stronger urinary infection can of course also lead to phosphaturia, even if the food is not responsible. In such cases the phosphaturia is rapidly obviated by urotropin in medium-sized doses. Usually the urotropin must be given continuously because generally only an inhibition of uric acid-decomposing organism is effected.

Stern considers it erroneous to speak of "the" dose. It varies in accordance with the resistance of the disease producers and other factors in each individual case. Often when $7\frac{1}{2}$ grains urotropin thrice daily proved unavailing, the number of bacteria rapidly decreased when the dose was doubled or trebled.

A peculiar interest attaches to the review of tariff history and the frank discussion of the tariff question by Andrew Carnegie which will be published in the Christmas Century. Mr Carnegie's experience and convictions—public opinion to the contrary—are, he declares, for a tariff for revenue instead of a tariff for protection, the issue of forty years ago, "and therefore the strict maintenance of the present duties upon foreign luxuries paid by the rich. The present tariff rightfully exempts the masses of the people from almost all national taxation, because they have not 'the ability to pay,' as required by Adam Smith the greatest economic authority."

Menorrhagia.—The desideratum for the relief of this condition is a remedy which will not only stimulate contraction, but will impart tone to the uterus as well. Such a remedy is Hayden's Viburnum Compound. Its action is superior to and far more lasting than Ergot and is devoid of the toxic effects of this drug.

Dr. Frederick Brush, of Boston, has been appointed Superintendent of the New York Post-Graduate Medical School and Hospital. Before assuming the position he will devote some time to a study of post-graduate instruction and hospital administration in the various American medical centers.



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SELECTIONS

Criminological Propaganda.—Arthur MacDonald, of Washington, D. C., has for a number of years been conducting a propaganda of free, thorough social studies, particularly criminology, which is of interest to physicians, since it is an investigation of man, especially his physical, mental and moral weaknesses with which every practitioner has to deal. One result of this propaganda is that recently Russia has contributed more than a half million of dollars towards a laboratory on the general plan of MacDonald, which includes investigations with instruments of precision and the obtaining of all important facts (physical, mental and moral) as to the individual and his environment.

The question may be asked why every ninety-nine citizens who are law abiding and respectable should be put to so much trouble and expense (it costs our country more than five hundred million dollars annually for criminals alone) by only one citizen, who is often a moral, mental or physical weakling.

The answer is, that this troublesome one per cent. of the community might be greatly reduced if they were studied personally and in connection with their surroundings, as has been done in physical diseases.

We have been looking upon crime, for instance, as a sort of necessity, and the idea of lessening it, as visionary. We have become so accustomed to hearing of crime as to be unconscious of its real extent and enormity; and, when realizing it, to erroneously assume its increase unavoidable. This was once the case with some physical diseases, until scientific study reduced them so much that they are now called rare diseases.

One great purpose of MacDonald's work is to furnish a basis for methods of reform, and, in addition, seek through knowledge gained by scientific study to protect the weak (especially the young) in advance before they have gone wrong, rather than after they have fallen and become tainted, which is the great defect of most schemes of reform.

Whether crime increases or not is not so important to know as the fact that there is no necessity for so much crime as exists; for it is due mainly to neglect or ignoring of the subject which, as in physical disease, allows it to push its roots still deeper into the community.

Large sums of money are being contributed for palliative measures, yet crime and other social evils are increasing in proportion to the population, showing that such measures (almost the only ones) do not lessen these evils. It is not intended here to criticize in the least any effort to alleviate suffering, but such alleviation is usually temporary and may even increase the disease. Investigation of causes is, therefore, imperative, and this cannot be done without scientific study of the individuals themselves, in connection with their environment.

A new line of work is liable to be regarded with caution, if not suspicion, especially if it deal with abnormal subjects. Since most new things are to a certain extent radical, any new study or method, however conservative, will be looked upon as radical. As the newspapers deal to a large extent with abnormal matter the study of such subjects, however important, suffers from a sort of notoriety, and is often made to appear as a fad. Owing to these difficulties, it has not been possible as yet to have Federal, State and City governments make some provision for the scientific study of crime and other abnormalities. MacDonald is not in the least lessening his efforts in this direction, but he needs financial assistance, not only to carry on the work, but to spread knowledge of it among officials and also in the community at large, as a necessary educative preliminary for obtaining both private and governmental endorsement. One is as necessary as the other, and the former (private endorsement) allows more freedom, which is important in developing new lines.

That this work is neither radical, visionary nor a fad, may be seen from the nature of the endorsements which practically include the representatives of the medical and legal profession of this country, not to mention the highest authority in Europe, that is the International Congress of Criminal Anthropology. No other humanitarian work has such indorsement.

Remarks on Glyco-Thymoline.—For many years past, says Dr. W. R. D. Blackwood, this preparation has been one of my main-stays in disease of the mucous membrane and it has held its place despite the trials of many other agents warranted to supplant it by the advocates who decried Glyco-Thymoline when I spoke of its virtues. Space is now getting too valuable to waste with long detailed descriptions of separate cases and anyhow I never did write in that manner—I think general remarks about agents is the better way and we need this more than stories of symptoms and temperatures, with daily alterations. No class of maladies is more troublesome than disorders of the mucous membranes and none more difficult to eradicate thoroughly and we have been put to our wit's end many times for remedial agents in such cases. The local treatment of catarrhs is frequently disappointing and none more so than the prevalent one—post-nasal catarrh. Unless we can get an alterative condition established little good is done and nothing has been of greater service to me than Glyco-Thymoline, locally and internally. In several hundreds of long standing and severe cases of this intractable and common affliction I have come to regard this preparation as a standard and almost routine remedy. I seldom care for a post-nasal catarrh without prescribing it at the onset and if I don't it is not long before it comes into use. It is just alkaline enough, just so as to the dialysis, (the action locally with exactly the right amount of fluid excretion through the diseased membrane), just enough astringent without drying the parts and just the right thing in the direct line of reparative work; it sets up tissue building soon after the membrane gets somewhere near its right shape. Many things are employed in catarrh, but I firmly believe that if I was confined to one agent only that would be Glyco-Thymoline. For years I used the so-called antiseptic tablets of boric acid and glycerin, etc., with good results, but for a long time past I used it in about half strength with a K. & O. Nasal Douche and from twice to four times daily. With this in bad cases I give it internally, adding to it or giving separately, mercuric bichloride and if done separately the memstrum is compound syrup of stillingia. In presumed syphilitic persons I always do this.

In gastritis, chronic enteritis, vaginitis, gonorrhea and in recurring attacks of what in many instances is deemed appendicitis, I use this agent freely, and always with good results. As a local application to foul ulcers and especially to hemorrhoids I think this preparation is very good. In the nasty leg ulcers which now and then defy all remedies Glyco-Thymoline does wonders—it can't do harm any time, and I am almost persuaded to give it in all instances. In bronchitis and asthma it is fine; in spasmodic croup it fills the bill nicely; it does well in venereal disorders locally and in balanitis it stops the trouble at once.

In case of sudden pulmonary infarct (Am. Jour. of Surg.), a patient should always be examined for hemorrhoids. A thrombosis of one of the veins of the prostatic plexus may also be the cause.

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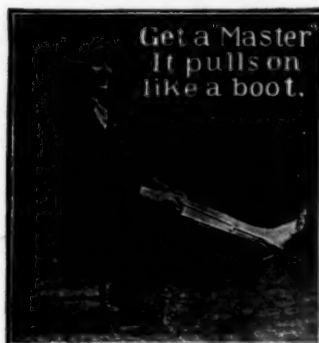
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SELECTIONS

Backward Children.—In a discussion concerning the cause of backwardness of children in the public schools of Philadelphia over a year ago, Dr. Joseph S. Neff, Director, etc., writes us that the following figures were given by an official of the Board of Education: that of the 172,140 school children 916 were termed "backward" children, of whom 45 per cent. were backward on account of mental defect, 10 per cent. on account of physical defect, while the balance were termed "incorrigible" from various causes. The position was then taken by the writer that physical defects caused a large minority of the backwardness of children, this opinion being antagonized by psychologists and others interested in the subject. To substantiate this position, in the summer of 1907 an examination was made of a large number of school children which showed that 60 per cent. had eye strain or defective vision, 25 per cent. of which was serious.

As a result of this investigation, an ophthalmological division in the Bureau of Health was established, I believe the first of its kind in the United States, and a central clinic in connection therewith, to which all children were referred by the Medical Inspector of schools. The claim of Philadelphia for precedence is for the establishment of a separate clinic for school work by the Department.

For years the fifty medical inspectors of schools in the course of their routine work had given attention to eye defects and had, in some isolated cases corrected the visual defects of these children themselves and referred others to general clinics and dispensaries where glasses were furnished in cases where the parents were able to buy them. In 1907 12,226 cases of defective vision were found, 3,179 of which were corrected and supplied with glasses.

This Division was organized for active service on January 1st, and is being largely increased. As this seems to be in my judgment a very important matter and as the result of the work has demonstrated that many so called mental defectives and incorrigibles do not belong to this class, I give you below the quarterly report of the Division,* from which, if you agree with me in its importance, you may select any figures you choose for publication.

From a sociological and economical standpoint the results obtained in this Department are of value. There is no doubt that nearly all these children would have received but little

benefit from their school life, and would not have made useful citizens. More likely they would have become charges upon the community, would have deteriorated, become immoral, or joined the criminal classes; and whether as a menace to the community on the streets, in the reformatories, charities, or jails, they would remain a public burden for which the tax payer would be responsible.

*These statistics may be obtained by writing Dr. Neff.

A Popular Saline Laxative.—Druggists doing a large prescription business report a phenomenal increase in the demand for granular effervescent aperients. There are any number of these upon the market of various grades of efficiency; but physicians seem to prefer the simple salts, prescriptions calling for sulphate of magnesia and sodium phosphate outnumbering materially those demanding compounds of known or partially secret character. Saline Laxative (Abbott) seems to be regarded as the representative preparation of magnesium sulphate and as it is even stronger than the official magnesium sulphate effervescens and decidedly more pleasant to take, it is very generally given the preference.

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SELECTIONS

Health lessons are taught by street car transfers in Troy N. Y. The use of these transfers has not been discontinued but their use has been materially and spiritually altered. The "soulless corporation," as corporations quite generally are styled may not after all be as soulless as it sometimes seems. The United Traction Co. of Troy has just printed a new supply of transfers, at practically double the cost of the transfers which it has heretofore issued, and this apparently for a philanthropic purpose. Their motives in printing on the backs of their new transfers such information as the Troy Tuberculosis Relief Committee of the State Charities Aid Association desires to disseminate, surely cannot be impugned as soulless or imputed to selfishness.

A post-operative distention (Am. Jour. of Surg.) that is not relieved by a high enema can often be reduced by washing out the stomach.

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Substitution.—A sentence to a term of imprisonment for "substitution" in a drug store may seem to some to be harsh, says the Daily Times, but it must be remembered that the offence is in any case swindling and is also potentially of the gravest that can be committed. In the case now in point the culprit refilled with ordinary water bottles which had contained water from a special spring. Perhaps no harm was done to life or health. But the purchaser of the refilled bottles was cheated, for he did not get that which he ordered and for which he paid, and the proprietor of the original contents of the bottles was injured, for the sale of the spurious stuff militated against the good repute of the genuine. For such an offence a man deserves severe punishment. But it must be remembered that the practice of substitution, if carried further, as it has been in not a few cases, might involve such vitiation of important prescriptions as would in the gravest manner affect the health and even the life of a patient. For such an offence three months in jail is really a light punishment. If the disposition of the present case, which has been before the courts for years, shall cause a general abandonment of a practice which has been by far too common a great gain for the public welfare will be attained.

A small meningocele may resemble (Am. Jour. of Surgery) a sebaceous cyst. The previous history is important in the diagnosis. A meningocele of this character is present "as long as the patient can remember" and remains about the same size; a cyst begins as a small nodule later on in life and increases in size.

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Standards of Infant Feeding.—The criteria and standards of feeding are discussed by T. G. Allen, Chicago, in "The Journal A. M. A.," November 14. The criteria by which we decide whether the baby is being properly fed are, he says, these six: comfort, sleep, good nature or, at least, the absence of much crying after feeding, the appearance of the stools, which should be free from curds or mucus, soft, not unpleasant in odor and mustard yellow in color, the regular gain in weight and the gain in strength and development. The baby is satisfactory when these conditions are normal, but if they fail to be met we must modify the feeding, and we ought to have certain standards to which we should try to approximate. These standards he takes to be three, naming them in the order of their value: 1. The daily proteid quotient. 2. The daily energy or energy quotient. 3. The nutritive ratio or the energy proteid ratio. The first of these and most important, proteid, is the essential for all building up of tissues, and the infant needs proportionally more than the adult on account of its rapid growth. Allen estimates this standard on the basis of weight, putting it in terms of quantity per pound per day—that is, the daily proteid for a baby divided by the weight of the baby in pounds, hence the name of proteid quotient here suggested. From his studies of the results in a large number of breast-fed babies, he thinks he can safely put the minimum proteid quotient at from 3.5 to 4 and the maximum at from 5 to 6 or from 1 to 1.5 ounces of good cow's milk to the pound. If the milk contains less than from 3.5 to 4 per cent. proteids, the amount of milk will have to be proportionally increased. As regards the energy standard, he approves of that of Heubner, that in every 24 hours the baby should have sufficient food to provide 45 calories of energy for each pound of its weight. We can form an idea of what this standard means by picturing to ourselves a level tablespoonful of milk sugar or three level teaspoonfuls of cane sugar for each pound of its weight. Taking into account the variation in babies, he averages it at 40, allowing a range of from 35 to 45. This proportion is, of course, larger than in an adult, owing to the rapid growth and metabolism, etc., in the child. The nutritive or proteid ratio, that is, the ratio between the proteid or tissue-building constituent and the energy-producing constituents of the food. Allen thinks it reasonable to begin with a ratio of about 9 or 10 (mother's milk averaging 9 and gradually decrease it to about 5 at the eighth or tenth month. Some of the sugars, starches or fats should be added to whole cow's milk to at least keep the proteid down to one-sixth of the total food, i. e., a proteid ratio of 1 to 5. The practical application of these standards is figured out rather elaborately, and he claims for his system the advantages of being more comprehensive than any other, giving absolute control not only of energy and proteid, but also of the ratio between the two, being easily changed to meet changing conditions and simple in its calculation methods. Taking the three numbers representing the weight, the proteid quotient and the ratio, it is seen that one-quarter of the product of the first and second gives the amount of milk for the day; the product of the second and third gives the energy in sugar units, and the product of the first, second and third (lessened by the ratio which must be averaged. of the food used) gives the sugar in hundredths of an ounce

Tuberculosis invasion of the ear, (Dr. W. Sohler-Bryant, Med. Record), is primary or secondary. Primary invasion is direct through the Eustachian tube or through the mastoid lymphatics. Tympanic tuberculosis is a very early sign of a more general infection. It also gives an accurate indication of the course of a concomitant pulmonary tuberculosis. Tuberculous mastoiditis has similar characteristics to tuberculous inflammation of other bones. Prognosis for the ear tuberculosis is good with proper hygiene and local treatment, and early thorough operative treatment in cases of bone involvement. Pyocetanin dry treatment is the most efficacious for tympanic tuberculosis. The evil effects of a tympanic tuberculosis may cause pulmonary tuberculosis to take a lethal course.

Phthisis.—Sustaining and maintaining an appropriate and full nutrition is most essential in tuberculosis. By keeping the blood standard up to as near a normal as possible, the patient's natural resisting powers are greatly enhanced and the inroads of this disease are at least retarded. Bovine sustains the patient perfectly, and is vastly superior to all other forms of feeding. It retards the pathological lesions, lessens the wasting and sustains the strength by supplying a full nutrition. It should be given at all ages and stages of the disease, and it is not antagonistic to any medication.

Byron Robinson is collecting old anatomies in any language. He would be pleased to communicate with physicians possessing anatomies or anatomical atlases published previous to 1860.

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SELECTIONS

"Medical Inspection of Schools" is the title of the first American work on a subject of primary importance to educators, physicians, parents, social workers, and members of boards of education. It is the most recent of the Russell Sage Foundation publications and appears under the joint authorship of Dr. Luther H. Gulick, Director of Physical Training in the New York City Public Schools, and Leonard P. Ayres, formerly General Superintendent of Schools for Porto Rico.

Medical inspection of schools is a movement which has progressed rapidly and widely, but sources of definite information concerning it have been so few that knowledge of its extent and importance in the United States, as well as in foreign countries, will come as a surprise to many. Probably few people realize that the movement is national in scope in England, France, Belgium, Sweden, Switzerland, Bulgaria, Japan, Argentine Republic and practically so in Germany. In the United States over one hundred cities and more than three hundred towns have more or less thorough systems. Massachusetts has a compulsory medical inspection law, New Jersey has a permissive one, Vermont a law requiring the annual testing of the vision and hearing of all school children, and Connecticut one providing for such tests triennially.

Despite the genuine importance of the movement as indicated by these significant facts, the only source of information as to what medical inspection is and does, its history, its status abroad and at home, and the means and methods it employs, is this new book by Gulick and Ayres.

Educators, physicians, social workers, and all who are concerned for the welfare of children will find in it much of value and interest. To superintendents and members of boards of education the chapters on administrative methods and legal status will be valuable, while librarians, school authorities and students of social subjects will not fail to note with satisfaction that the most extensive bibliography of medical inspection yet compiled is a feature of the book.

Single copies postpaid \$1. Charities Publication Committee, 105 East 22nd Street, New York.

An easy means of holding a (Am. Jour. of Surgery) small scalp dressing in place consists in tying over it strands of the patient's hair.

The von Pirquet Reaction.—The cutaneous reaction to tuberculin, as originated and described by von Pirquet, has been confirmed by many observers. The method is as follows: The skin is scarified in the usual manner for vaccination. The scarified area is treated with a dilute solution of old tuberculin (Pirquet used 4 per cent. solution of old tuberculin, which is considered by later investigators to be too strong), the usual strength being a 1 per cent. to 4 per cent. solution. If the patient is tuberculous there appears within forty-eight hours a papule surrounded by a hyperemic zone an inch to an inch-and-a-half in diameter. The disappearance of this papule is often followed by a brownish pigmentation of the skin which may persist for some time. The reaction has various degrees of severity from a very small papule to a large and intensely inflamed area. However, the severity of the reaction is not a measure of the extent of the tuberculous process. The reaction is not attended by general symptoms such as fever and malaise.

Hip-Joint Tuberculosis.—W. T. Berry, Birmingham, Ala. (Journal A. M. A., May 23), describes the symptoms of hip-joint tuberculosis and its treatment. He disregards the numerous temporary makeshifts for the early treatment; what is wanted is plenty of fresh air and sunshine along with the most effective treatment possible. The plaster-of-Paris spica bandage, properly applied, is one of the best means of fixation and protection of the joint. If the disease is very active it may be well to keep the patient in bed for a few weeks, but if not painful, walking with crutches may be allowed. Try to prevent abscesses by keeping the patient quiet, but if one forms, put the patient to bed till the painful symptoms disappear. With quiet and protection, nearly one-quarter of the abscesses will disappear. If an abscess seems certain to open, it may be incised where best drainage is afforded. If sinuses form, dress them as infrequently as possible. Mechanical treatment gives the best results; excision is to be looked on as an operation of necessity only, and amputation as a life saving measure. From nourishing food, fresh air and sunshine, good hygienic environment and conservative treatment we can hope for the best results. The various braces are mentioned as employed, and the Cabot wire frame as especially adapted for use with baby patients.

The pelvic brain is a definite collection of nervous ganglia located on the bilateral cervical borders. It rules the physiology of the genitals (sensation, peristalsis, absorption, secretion, menstruation, gestation, ovulation).—Byron Robinson.



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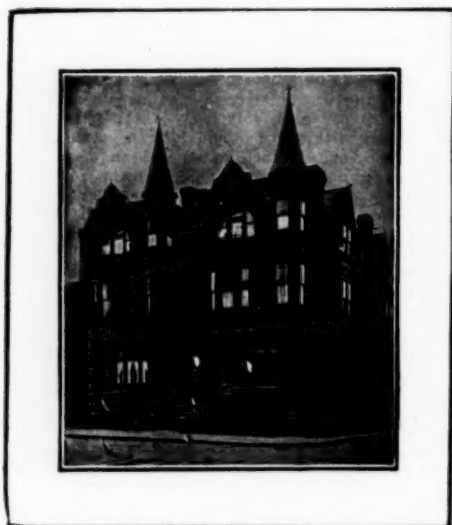
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